THE ENGINEERING AND MINING JOURNAL AND COAL

(Published Every Saturday at 253 Broadway, New York.)
Entered at the Post-Office of New York, N. Y., as Second Class Mail Matter.

VOL. LXXI. JANUARY 19, 1901. No. 3.

RICHARD P. ROTHWELL, C. E. M. E., Editor.
ROSSITER W. RAYMOND, Ph. D., M. E., Special Contributor.
THE SCIENTIFIC PUBLISHING CO., Publishers.

SUBSCRIPTIONS ARE PAYABLE IN ADVANCE. For the United States, Mexico and Canada, $5 per annum; all other countries in the Postal Union, $7.

REMITTANCES should be made by bank drafts, post-office orders or express money orders on New York, payable to the Scientific Publishing Co.

When change of address is desired, both old and new address should be sent.

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Main Office: 253 Broadway (P. O. Box 1833), NEW YORK.

Telephone Number, 3,095 Cortlandt.

New York Cable Address—"ROTHWELL." (Use McNeill's or A B C 4th Edition Code.
London Cable Address—"PULCINETTO." " " " "

Branch Offices:
Chicago, Ill 737 Monadnock Building, Phone 73 Harrison.
Denver, Colo., Boston Building, Room 206.
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Vancouver, B. C., Office, Molson's Bank Bldg. Wm. M. Brewer, Manager.
London, Eng., Office, 20 Bucklersbury, 368. E. Walker, Manager.

English subscriptions to the JOURNAL may be paid at the London Office at the rate of $7 = £1 8s. 9d.; the publications of the Scientific Publishing Company may be bought at the rate of 4s. 2d. to the dollar, net.

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The Index for Volume LXX accompanies this number of the “Engineering and Mining Journal.” Its size and the large number of titles which it contains furnish once more evidence of the great variety of subjects treated in our columns. There are few, if any, topics of interest in the mining or metallurgical world to which references cannot be found in the crowded columns of the Index.

Accompanying this issue of the “Engineering and Mining Journal” our readers will find a “Canadian Supplement,” devoted to the mining and metallurgical interests of our neighbor, the Dominion of Canada. The purposes and objects of this are more fully explained in the “Supplement” itself. We may say here that we intend to make this a monthly issue, and we hope to make it a worthy exponent of the important and growing mineral industry of Canada. It will contain, besides the current mining news of the Dominion special articles on mines and metallurgical works, correspondence from all sections of the country descriptions of new fields, records of geological explorations, and other matter of immediate interest to Canadian miners and manufacturers.

The finding of petroleum in the southeastern section of Texas, which is noted in our news columns, is of importance. It is well outside of the Corsicana District, where most of the oil wells in Texas have been located, and apparently opens up an entirely new field. The new well is a large producer, and the announcement of its discovery will doubtless cause a rush to the district and the beginning of explorations on an extensive scale. The strike was so unexpected that no adequate preparations were made for handling the oil, and at present it is stored simply in pools excavated in the ground. The oil is said to be a light oil of good quality, which will yield a large proportion of good illuminating oil on refining. It is near tidewater at a point where it can be easily handled and cheaply transported, which adds to the importance of the find.

The story of the London & Globe Finance Corporation, which is told in another column, may be read with profit by investors on this side of the water—especially in Boston—at the present time. The floating of a company, apparently built and designed on lines somewhat parallel to those of the London & Globe, may attract a certain class of buyers, but can hardly draw investors who are looking for steady returns on their money rather than an indefinite gamble. Those who do subscribe to the stocks of such companies deserve little sympathy, since most of them do so in the hope of unloading upon someone else while the boom on the stock lasts. A few, however, may be drawn in innocently by glowing advertisements and prospectuses, and these should be warned in time. Such companies as the London & Globe and its would-be imitators here do very great injury to legitimate mining enterprises.

The railroads, it is understood, have at last agreed on a reduction in iron and steel freights from Pittsburg both east and west. The cut will be from 15 to 20 per cent., and will be made on pig iron and billets by a direct reduction, and on finished iron and steel chiefly by a lowering of the classification. It is understood that there was a good deal of opposition to the reduction, some companies considering it bad policy to make concessions as long as the steel men maintain a high price for rails. The reduction has been due, very probably, in large part to the proposed action of some large companies in establishing new plants on Lake Erie, where shipments both east and west can be made by water. In some quarters the projected action was characterized as a “bluff,” but it seems to have been a successful one. The new rates, which will take effect February 1st, are on domestic business, and do not affect the special rates heretofore given on steel and iron for export.

The total exports of the United States last year reached the great value of $1,478,050,854, the largest ever reported in a single year. While part of the increase over 1899 and 1898 was due to a general advance in prices, and another part to the extraordinary large exports of agricultural products, no small part of the gain was the result of the growth of our foreign sales of manufactures of various kinds. These have grown steadily for several years, until they now form about one-third of the total. A large share of the exports of manufactures is furnished by our mining and metallurgical industries, iron and steel in various forms and fine copper being the more important items. We have heretofore referred in detail to the exports of iron and steel; those of fine copper in 1900 reached the large total of 159,564 long tons, being over 59 per cent. of our total production. The United States, in fact, now controls the copper markets of the world, which depend upon our mines for so large a part of their supply.

OUR TRADE WITH RUSSIA.

We call especial attention to the letter of a well-informed correspondent in another column on the critical state of the trade relations between Russia and the United States, and the cause. It is well known to many that in the past two or three years the trade of our manufacturers in Russia has been steadily increasing; and this is especially the case with Siberia and the section which is reached through the Pacific ports. The eastern end of the Siberian Railroad is largely built with American material and equipped with American locomotives. The construction of that railroad, moreover, is opening to our builders of mining machinery a market which has very large possibilities of future growth and development. It is a market which manufacturers in this country are particularly well situated to supply; and they have a further advantage in the fact that the Russian Government and Russian mine operators are generally well disposed toward Americans and inclined to favor American machinery and methods. The exports of manufacturers to Russia directly in the 11 months ending November 30th, 1900, reached a total value of $10,385,000; and in addition to this there were large shipments made through German ports, which do not appear on our returns as sent to Russia. Of the direct exports shipments to the value of $2,639,000 went through Pacific ports.

The reciprocity agreements made by our State Department appear well calculated to assist in the growth of this trade. By putting the United States on "the most favored nation" footing in Russia, they ensure moderate rates of duty and a fair chance for competition. Moreover, under a special arrangement made on account of the large purchases of material for the Siberian Railroad, our manufactures are admitted free at the Russian ports on the Pacific. Our manufacturers have already largely increased their trade with the Empire, and at the present time large contracts are being filled in our shops.

We find, however, that the reciprocity arrangement is "held up" for the present and may fall through. This has been done through the influence of the sugar manufacturers, because Russia is also put on the "most favored nation" footing, and is thus enabled to send to this country a little beet sugar. The total value of this during 1900 was only a little over $300,000, and it does not appear likely to increase, since Russia is an importer rather than an exporter of sugar, as a rule.

Should the reciprocity agreement fail, our manufactures in Russia would be subject to high rates of duty, which would be practically prohibitory; and manufacturers who have contracts still unfilled would be seriously embarrassed.

The "Engineering and Mining Journal" believes in the expansion of our foreign trade, and in the fullest and freest possible exchange with other countries. But from any point of view, even that of the most rigid protectionist, the balancing of $300,000 against a present $10,000,000, and possibly two or three times that, is a most unprofitable business. Our manufacturers should look into this matter and take action at once. We understand that an effort is to be made to obtain action by the National Association of Manufacturers, and this should be supplemented by individual action wherever possible. We do not think that our iron and steel men and makers of mining and other machinery will be satisfied to give up to a small sugar ring; and they will make a good—we hope a successful—fight at Washington; in which the "Engineering and Mining Journal" will give them all possible aid.

THE COLLAPSE OF THE LONDON & GLOBE FINANCE CORPORATION.

The London mining market has witnessed several sensational collapses during the year 1900, but that of Mr. Whitaker Wright's London & Globe Finance Corporation, which occurred immediately after Christmas, offers convincing proof of the instability and insecurity of mining investment and speculation in London. In a few words the facts of the collapse are these: The corporation was endeavoring to support the market in the shares of some of its subsidiary companies against the onslaught of the bears, and at the fortnightly settlement, just after Christmas, found that it could not find or borrow the necessary cash to pay for the quite unexpected number of shares delivered by the sellers. The immediate consequence was the failure of 16 firms of brokers acting for the corporation, and the announcement that the corporation would have to go into liquidation. The City had a pretty bad shock, but the press considerably exaggerated the importance of the affair. Of course the market for all the Whitaker Wright group was disorganized, and the quotations fell to nominal figures. It is probable also that many of the other companies will have to suspend operations, and the Baker Street & Waterloo Electric Railway may have to be sold. It is absurd, however, to compare the collapse with a bank failure or the Baring crash, as many of the daily papers have done. The evil influence of the collapse on the chances of raising capital in London for legitimate mining propositions will be bad enough without imagining any other calamities.

The London & Globe Finance Corporation was formed in March, 1897, and was an amalgamation of a former company of the same name with the West Australian Exploring and Finance Corporation. The latter company was started in September, 1894, and was the first company formed by Mr. Whitaker Wright after he had recovered from his previous failures with American properties. The London & Globe and its predecessors floated a number of West Australian properties, of which Lake View Consols and Ivanhoe have been the only gold producers. When the British Columbia and Klondike boom came along in 1897, Mr. Whitaker Wright formed another promoting company, the British America Corporation, which has since worked conjointly with the London & Globe in the flotation of subsidiary companies. At the end of 1898 we had the flotation of the Le Roi Company; in 1899 the Standard Exploration Company, which was a rehash of the unsuccessful West Australian and New Zealand mining companies previously floated by the London & Globe, together with an option of a placer property at Baranoff Island, Alaska; also in 1899 the Caledonia Copper Corporation and the Nickel Corporation, which were floated to acquire properties in New Caledonia; while in 1900 we have seen the flotations of Le Roi No. 2, Rossland Great Western, and the Kootenay Mining Company, formed to take over the remainder of the corporation's properties in British Columbia. Within the last few months the corporation made an attempt to float off its remaining property, the Baker Street & Waterloo Electric Railway. All these companies had enormous capitals quite out of proportion to the work to be done, and the prices paid to the vendors were similarly inflated, while the dividends have been correspondingly meager. The two parent corporations have paid trifling dividends, and the Le Roi has paid 5 per cent. for the two years of its existence. Lake View Consols and Ivanhoe have made large returns in dividends, but these dividends have done little for shareholders, who bought at the greatly inflated prices ruling in the market. None of the other companies appear to have paid any dividends, and practically nothing has been heard of them since their flotation. The Baker Street & Waterloo Railway has been by far the most expensive of all the corporation's undertakings, and large sums of money have had to be found in order to keep the work going. No assistance could be obtained from the money market for the prosecution of this work, as the banks, insurance offices and other institutions with large amounts of money to place did not consider the parentage of the railway respectable nor the management of the London & Globe orthodox. The corporation was therefore obliged to provide its own funds and it is no doubt this fact which has been the immediate cause of the collapse.

The corporation had other calls on its capital, for it had to guarantee the taking up of shares in all its subsidiary companies, and to counteract the bears by buying up these same shares in the open market. Owing to the meagerness of the reports no outsider could exactly tell the financial position of the various companies or whether the assets were in cash or in shares. All these matters have been pointed out over and over again in the "Engineering and Mining Journal," and it is hardly likely that any of our readers are shareholders in any of the Whitaker Wright companies. The objects of the companies were not either mining or finance, but mere gambling, and buyers of such shares can only reap a profit by selling off to some more credulous person.

The future of the London & Globe and its group cannot be forecast at present, as the shareholders have to be consulted first. It is to be feared that a voluntary liquidation of the London & Globe will be agreed to, though in the interests of the public a compulsory winding up in the bankruptcy court should be forced on the directors. The Baker Street & Waterloo Railway will probably have to be sold, and the holdings of the corporation in the subsidiary companies will have to be gradually disposed of. It is also possible that Mr. Whitaker Wright may persuade the shareholders to agree to a reconstruction with a further subscription of 5s. a share, but it is to be hoped that this will not be done. The future of these subsidiary companies is also uncertain. Ivanhoe can get along all right without Mr. Whitaker Wright's interference, and Lake View Consols, with a proper metallurgical process, may yet produce a satisfactory amount of gold from its refractory ores. Le Roi will be able to pay dividends for some time out of profits made by the treatment of the ore at present in sight, but the life of the mine is uncertain, if the report is true that developments in depth show the deposits to be limited. It is possible, however, that lateral exploration may disclose new ore bodies. The only other British Columbian property likely to yield results is the Columbia-Kootenay, where the large deposits of low grade pyrrhotite may yield a smelters' profit. Results from any other of the London & Globe companies are of very doubtful promise. Altogether the prospects of the Whitaker Wright shareholders are not at all rosy.

NEW PUBLICATIONS.

"Le Fluor et ses Composes." Par Henri Moissan. Paris, France; G. Steinheil. Pages, 400; illustrated. Price (in New York), $5.50.

In the preface to this valuable study of fluorine and its compounds the author says that the important discoveries now to be realized in chemistry are not the increase of the number of so-called elements, but rather their diminution. This is to be accomplished by working in a systematic way from one simple body to another. Whether the different elementary bodies are derived from a single primordial element, or from the combination of two substances is of comparatively small importance from this point of view. The material point is to be able to prove that the simple bodies of the same natural group are not separate elements, but rather allotropic varieties of the same element.

In this volume M. Moissan has collected the accounts of his researches on fluorine and its compounds which he has published from time to time. He has added the results of his recent work and has arranged all his material in such form as to make the whole a connected and systematic study. The opening part of the book describes the separation of fluorine from the compounds in which it is found in nature, with the apparatus used, and then proceeds to describe the properties of this gaseous element. He then reviews the compounds formed by fluorine with the metalloids, and studies carefully in detail certain of the fluorides. A chapter is occupied by the combinations of fluorine with the metals. Another describes the action of this element upon certain organic bodies. In conclusion there is a study of some of the properties of fluorine which have been discovered by recent researches. It is a complete and valuable study of an element hitherto comparatively little known, and adds much to our information relating to it. M. Moissan has treated his subject in a clear and interesting way, and his work will be valuable to chemists.

A bibliography of the subject, brought up to the end of 1899, completes the book. It begins with the work of Agricola, dated 1558, which is the first in which the subject of fluorspar and its composition is considered. This bibliography is really double, the books and memoirs named being arranged in one chronologically and in the other part by the names of the authors, without regard to date. This is an example of the careful work shown throughout the book.

BOOKS RECEIVED.

In sending books for notices, will publishers, for their own sake and for that of book buyers, give the retail price? These notices do not supersede review on another page of the Journal.

"Handbook of Practical Hygiene." By Dr. D. H. Bergey. Easton, Pa.; the Chemical Publishing Company. Pages, 164.

"A Text-book of Urine Analysis." By Dr. John H. Long. Easton, Pa.; the Chemical Publishing Company. Pages, 250; illustrated.

"Rhodesia Chamber of Mines. Report for the Year Ending June 30th, 1900. Buluwayo, Rhodesia; printed for the Chamber. Pages, 88.

"Massachusetts State Board of Health. Report on the Discharge of Sewage into Boston Harbor." Boston; State Printers. Pages, 88; with maps.

"Evolution of the Thermometer, 1592-1743." By Henry Carrington Bolton. Easton, Pa.; the Chemical Publishing Company. Pages, 98; illustrated.

"Engineering Chemistry." Second Edition, 1900. By Dr. Thomas B. Stillman. Easton, Pa.; the Chemical Publishing Company. Pages, 504; illustrated.

"A Description of Certain Coal Lands in the Big Sandy Valley of Eastern Kentucky." Winchester, Ky.; issued by Beckner & Jouett. Pages, 56; illustrated.

"The Chemists' Pocket Manual." By Richard K. Meade. Easton, Pa.; the Chemical Publishing Company. Pocket-book form, pages, 204; illustrated. Price, $2.

"Notes on Some European Iron Making Iron Districts." By Charles Kirchhoff. New York; reprinted for the Author from the "Iron Age." Pages, 114; illustrated.

"History of the Portland Cement Industry in the United States." By Robert W. Lesley. Philadelphia; the American Cement Company. Pages, 144; illustrated.

"Elementary Organic Analysis. The Determination of Carbon and Hydrogen." By Dr. Francis Gano Benedict. Easton, Pa.; the Chemical Publishing Company. Pages, 88; illustrated.

"New York State Museum, Bulletin No. 30. Petroleum and Natural Gas in New York." By Edward Orton. Albany; published by the University of the State of New York. Pages, 128; with maps. Price, 15 cents.

CORRESPONDENCE.

We invite correspondence upon matters of interest to the industries of mining and metallurgy. Communications should invariably be accompanied with the name and address of the writer. Initials will only be published when so requested.

Letters should be addressed to the MANAGING EDITOR.

We do not hold ourselves responsible for the opinions expressed by correspondents.

American Trade with Russia.

Sir: I would like to call your attention to a matter of much interest to many American manufacturers. An effort is being put forth by the beet sugar interests of this country to prevent the importation of beet sugar from Russia by having the Secretary of the Treasury abrogate the clause in our present reciprocal arrangements with Russia, wherein the said sugar is brought into this country under the "favored nation" rate of duty. This will prohibit any further imports of sugar from Russia by putting in force the tariff rate of the Dingley Bill against said sugar, which will, with the internal revenue tax, if the sugar manufacturers of Russia must buy their own goods, effectually put a stop to any further importation from that quarter. While I do not contend that the beet sugar interests shall not have the widest possible scope in the exercise of their rights I do, however, maintain that it is the duty of every American manufacturer to take warning as to how his own interests are to be affected by this proposed action.

If the Secretary of the Treasury carries out the arrangement which has been proposed, and which I believe is suspended for about 60 days, it will be promptly met by retaliation from Russia in the shape of an increase in duties against all classes of American manufactured goods, ranging from 25 to 30 per cent. This will be in effect also prohibitive as to any further exports from this country, and there will be left in the lurch hundreds of American manufacturers with half completed orders on their hands and a new basis of estimates as to expenses which can hardly be met by increase of numbers, as many of the goods which are now being made in American factories to be consumed in Russia, have been arranged for by specific contracts, which contracts take no account, of course, of the changes in existing tariff, such changes being entirely unexpected.

The total value of sugar imported from Russia during the ten months ending October 31st, was a little over $300,000, while during the same period this country sold to Russia manufactured goods amounting to $10,000,000. During the first ten months of 1900 we sold to Russia $9,440,000 of goods. This, of course, means goods sold direct and going into Russia via the Baltic and Black Sea ports, and takes no account of the millions of dollars' worth of goods which have been imported into Russia via England and Hamburg.

It is my belief that the National Association of Manufacturers of America should form committees and deputations and every company or private concern, whether a member of this association or not, should in every way possible prevent the consummation of this very radical action. The public should be informed, if it does not already know, that upon the completion of the Trans-Siberian Railway system the field which will be offered in Siberia for American machinery of all kinds will be unprecedented. You are, of course, aware that under our present arrangements all articles manufactured in this country are admitted absolutely free of duty to the port of Vladivostok and other Asiatic ports of Siberia and Russia.

New York, Jan. 11, 1901. W.

Newfoundland Mines.

Sir: Among the copper producing countries of the world, Newfoundland ranks as fifth, and from discoveries made during the last twelve months its position must improve. The copper mine at York Harbor, Bay of Islands, has been sold to an English company for £30,000. D. J. Henderson is now in England making final arrangements. There is about 2,000 tons of copper ore on the surface and about 17,000 tons in sight.

Iron ore also abounds. The iron mine at Bell Island, Conception Bay, is now being worked on a very large scale. The strike that was on for many weeks in the early part of the summer was settled satisfactorily, with an increase of about 20 per cent. to the labor employed. This mine lay dormant until a few years ago. Bonnycastle, who made a chart of Newfoundland in the early part of the century, marked Bell Island as an island of iron, but this attracted no attention. There are also several large deposits of iron ore on the main land; one I may mention is the Workington Mine at Bay-de-Verde, which was discovered about five years ago by John Winsor, and capitalized by a London company for £150,000. Some £48,000 of this money has been spent, not in developing the mine, but in building houses, 6 miles of railroad with rolling stock, piers, etc. The principal shaft is about 130 ft. deep and shows a 7-ft. seam of iron ore. This mine is at present closed down, but it is to be hoped that it will again start on the scale that the great preparations made will warrant.

There are also deposits of lead and silver which have been discovered around this coast. The lead and silver mine at Little Placentia, Placentia Bay, known as Cliff Silver, was first discovered by John Burke about 18 years ago and sold to Ellor Houson for a London company, by the late C. S. Fowler, for $4,500. It was then worked for a short time and closed down. Later C. S. Fowler went to London and secured another company which worked it for six months, when death overtook some of the principals, causing a failure the second time. The last attempt to work this mine was made by J. W. Foran, of St. Johns, who refused an offer of $80,000 for it, but owing to Mr. Foran's death, Cliff Silver Mine is again closed. The mine is situated in Broad Cove Gulch, about ⅛ of a mile from the Harbor of Little Placentia. There are several drifts into the mountain from the level, all showing veins of lead and silver; there is about 200 tons of ore on the dump.

There are several other claims in Placentia Bay showing lead and silver. The Ship Harbor mine has given specimens of 400 oz. of silver to the ton.

Several attempts have been made to mine gold, one at Brigus on Conception Bay and another at Mings, on Notre Dame Bay, but they had to be abandoned for various causes. Mr. Butler, the successful prospector of Bell Island, has made a discovery at Rose Blanche on the west coast of the island. There are quite a number of claims taken out there, but the largest are held by a company in St. Johns, which secured four claims, two to the west of Butler, one south and one east. Arrangements are already made by the enterprising firm of Harvey & Company, of St. Johns, for the working of two of these claims. They are shipping 60 tons to different parts of Canada and the United States for a final mill test. If this proves satisfactory they will place 100 stamps on the property.

Prof. N. M. Howitt, of London, England, visited Rose Blanche last fall, and reported favorably upon the Butler-Clark as a low-grade free-milling proposition. He recommended further development by an adit, and the erection of a large mill. Prof. Howitt estimated that the cost of mining, milling and all local expenditure for working this ore body

would be from 40 to 60c. per ton. Labor is very cheap and abundant water-power can be utilized.

In conclusion, I may say that we have about 700 miles of railroad running to different parts of the island, owned and operated by R. G. Reid. This road passes through timber lands and farm lands, skirting rivers such as the Humber, and lakes such as Grand Pond, 60 miles long. Newfoundland has many attractions for the lumberman, the farmer, the cattle raiser and the sportsman, as well as the miner.

St. Johns, N. F., Dec. 25, 1900. T. J. Freeman.

RECENT DECISIONS AFFECTING THE MINING INDUSTRIES.

Specially Reported for the Engineering and Mining Journal.

REQUIREMENTS UNDER LAWS OF MONTANA ON LOCATIONS.—Under the Laws of Montana (Statutes Montana, 1887, Division 5, Section 1,477), requiring locators of mining claims to make and file for record with the county recorder a declaratory statement of same under oath, it is not sufficient for parties claiming under a location after an alleged forfeiture by others, to allege simply that they have caused a record notice of their location to be made, for this is a mere conclusion, and does not suggest that the notice was ever verified, or put on record in the proper county. And since the Laws of the United States (Section 2,324) authorize the expenditure required to be made on lode mining claims to be either in work and labor or improvements, it is not sufficient for such parties claiming under a re-location to allege as such forfeiture that the others had failed during certain years to perform $100 worth of work and labor on the claim, but they must also negative the expenditure of that amount on improvements.—Power vs. Sla (61 Pacific Reporter, 468); Supreme Court of Montana.

DESCRIPTION AND FILING CERTIFICATE.—The law (General Statutes, Section 2,400), allows the filing of an additional certificate of the location of a mining claim, where the locator apprehends that his original certificate is defective, or he desires to change his surface boundaries, or take in part of an abandoned claim. The court holds that where the original sufficiently located the discovery shaft, and an additional certificate gave a description by metes and bounds starting with the discovery shaft, and running to posts in a mound or stone, the claim could be identified with certainty from both certificates taken together, and hence such certificates were admissible to establish the locator's claim, though neither taken alone sufficiently describe such claim. A description that the mine is located in a certain section on top of the mountain south of Dew Drop Gulch is sufficient, since the gulch is a natural object of permanent monument. And a description which locates the mine a certain distance from a patented mine is sufficient, since such patented mine will be presumed to be a natural object or permanent monument.—Duncan vs. Fulton (61 Pacific Reporter, 244); Court of Appeals of Colorado.

SUFFICIENCY OF PLEADING TO SUPPORT JUDGMENT.—A complaint which alleges that one is the owner of a mining claim, and of all the precfous metals contained in any vein or lode, through its entire depth, whose apex is within the surface lines of such claim, and that another, the owner of a claim which adjoins one side line of the other, has mined and removed ore from a vein which has its apex in the claim of the first one, is sufficient, in the absence of a demurrer, to support a judgment in favor of the first party for the conversion of such ore, although it does not spcifically allege the facts which show that the boundary line between the claims of the parties is a side line of the claim of the first, beyond which it has extralateral rights. Where in an action for the conversion of ore, an injunction has been issued, in compliance with which the one enjoined has stored certain ore, prior to that time mined, it is not entitled to have the value of such ore taken into account in reduction of damages, unless it proves such value, and returns or tenders such ore to the party.—Montana Mining Company vs. St. Louis Mining and Milling Company (102 Federal Reporter, 431); United States Circuit Court of Appeals, Montana.

DUTY ON CHARCOAL IRON.—The merchandise in question in this case consists of iron, which was returned by the local appraiser as "charcoal bar iron," and upon which duty was assessed at the rate of 0.6c. per pound under the provisions of paragraph 123 of the act of July 24th, 1897. The importers claim said iron is dutiable at the rate of $12 per ton under the provisions of the proviso to paragraph 124 of said act, the language of which is as follows: "Provided further, That all iron bars, blooms, billets, or sizes or shapes of any kind, in the manufacture of which charcoal is used as fuel, shall be subject to a duty of $12 per ton." It is contended on the part of the Government that this proviso is limited to the particular paragraph of which it forms a part, while the importers claim that said proviso extends throughout the entire iron schedule, and is intended to and does in fact cover "all iron bars, blooms, billets or sizes or shapes of any kind in which charcoal is used as a fuel," and that, therefore, the fuel described is the standard and sole guide to determine classification of iron bars, etc., throughout the iron schedule.

The decision is that the proviso to paragraph 124, act of July 24th, 1897, is limited in its operation to the paragraph itself, and does not extend beyond it. Only such classes of iron as those provided for by that paragraph which may be manufactured by the use of charcoal as a fuel are covered thereby and all classes of iron specially provided for in other paragraphs of the act are not included.—Appeal of Wheelock, Lovejoy & Company from Collector of Customs at New York; United States Board of General Appraisers.

NEW COAL MINE IN DUTCH BORNEO.—A company has been started at Sourabaya to work the coal mines at Pulo Nangka, an island off the coast of Dutch Borneo. The capital is 300,000 guilders. The coal exists in large quantities, and has been found to answer as fuel for steamers. Mining has begun, and 1,000 tons of coal were ready for shipment on the island on October 1st last.

EXPLORATIONS BY DIAMOND DRILL IN BRITISH COLUMBIA.

By Our Special Correspondent.

In many ways the South African war had rather a bad effect on the mining industry of British Columbia and the northwestern part of the United States, and more especially has this been noticeable lately in diamond core drilling. This is largely due to the advance in the price of borts or black diamonds. Previous to the commencement of the troubles in South Africa, diamonds suitable for core drilling could be purchased as low as $16 per carat; the price since then has been advanced until to-day it ranges about $70 per carat and they are hard to obtain even at that figure. As a natural consequence the price per foot for core drilling has advanced enormously. Four years ago, in rather remote camps of British Columbia and the Northwest, the contract price (according to accessibility, etc.) ranged from $1.25 to $1.50 per foot. To-day, although the opening of new railroads and roads, reduction in prices of supplies, etc., has placed these camps in a much better position than formerly, the price is something like $4 per foot.

The reopening of the diamond mines may be expected to bring the price of diamonds down to its former level, and the drilling industry is bound to take a spurt, as many properties will be explored in that manner for the purpose of discovering ore bodies which do not outcrop continuously or which outcrop only on adjacent properties, where the tunnel or shaft methods of exploration are considered too costly.

With regard to the state of the drilling industry generally in British Columbia, some work is being done in Rossland, and the White Bear ground adjoining the Le Roi is being explored pretty extensively. In the Boundary District some drilling is being done at Phoenix on the Knobhill and Old Ironsides claims. In the Nelson District at Ainsworth Camp, the company controlling the Highland Group has just let a contract for a hole to be drilled at the end of the 1,000-ft. tunnel, in order to ascertain if the vein which was encountered on higher ground can be discovered at depth.

COAL MINING TROUBLES IN INDIA.—A recent issue of "Indian Engineering" says that the Bengal coal companies are again loud in their complaint of the short supply of coal wagons on the East Indian Railway, and the Indian Mining Association has addressed a strongly-worded protest to the agent, remarking, among other things, that the shortage is incomprehensible in view of the fact that the pressure in the grain traffic, which was last year's excuse, has now been quite relieved.

AN UNDERGROUND FIRE IN FRANCE.—The "Colliery Guardian" says that an underground fire, which broke out on December 7th in a road 40 m. deep, connected with the downcast Pelissier shaft of the Villeboeuf Colliery, Saint-Etienne, Loire, is attributed to a heating of the timbers and the hot places being fanned into flame by the active air current. In endeavoring to save the horses three miners were overtaken by asphyxia, but were rescued and sent up to the surface. Twenty horses were stifled; nearly 700 men were thrown out of work for a week, and the company's loss is estimated at about 50,000 fr., which, however, is covered by insurance.

MINERS' LAMP EXTINGUISHER.—In an automatic arrangement for extinguishing miners' safety lamps, on an attempt being made to open them, devised by Herr Wilhelm Seippel, of Bochum, Westphalia, a conical burner-cap is pressed down in its place on the top of the wick-holder by the glass cylinder, compressing two spiral springs, when the lamp is closed, the extinguisher plate (connected by an articulation with the burner-cap) being then held out of the way. When, however, on the lamp being opened, the glass cylinder no longer keeps down the burner-cap, the latter, pressed upward by the two spiral springs, brings the extinguisher plate down upon the top of the wick-holder, thus putting out the flame immediately.

SIEMENS-HALSKE ROCK DRILLS.—The "Colliery Guardian" describes an arrangement of withdrawing gear for rotary rock drills with accelerated differential advance for the feed-nut, patented by the Siemens & Halske Aktien-Gesellschaft. In order to effect an automatic screwing back of the feed-spindle while the machine continues in operation (the boring spindle continuing to revolve) the revolution of the feed-nut is temporarily slackened or interrupted, differential gear for the feed-nut being introduced into the contrivance for accelerating the revolution of the feed-spindle. Alteration in the speed of the feed-nut is brought about by disconnection of the toothed circumference of one of the four differential pinions which (connected by boss or spindle through a loose coupling) determine the feed, whereupon the revolving feed-spindle screws itself back with undiminished speed in the feed-nut, which is either held fast or revolves at a slower speed.

SAFETY OF MINES IN BELGIUM.—The London "Colliery Guardian" says that a recent Belgian Ministerial circular enjoins that mine cages for men be provided with a roof and also a full (unperforated) floor, that their long sides be closed in as completely as possible by either full or perforated plates or by wire netting, but with openings left to permit of signalling and of inspecting the shaft, while also having arrangements for allowing the men to leave the cage in the event of its accidental stoppage in the shaft. Care must also be taken to provide the short sides, or ends, with doors or barriers, that cannot be opened accidentally, for closing the compartments to the height of 70 cm. if they are not very high, and to about 1.25 m. if they are high enough for men to stand upright, while in all cases the barriers must be sufficiently complete to prevent the possibility of a man slipping underneath and falling down the shaft. This measure is evidently the outcome of a paper, in the "Annales des Mines de Belgique," by M. Victor Watteyne, on "Means for Preventing Accidents in Mine Shafts."

*LOS TEPALCATES SILVER MINE, MEXICO.

Written for the Engineering and Mining Journal by V. Lander.

This mine is the property of the London Scottish Exploration Syndicate, Limited, and is situated in the State of Sonora, Mexico, in the district of Arizpe, about 150 miles east of the Gulf of California, and about 130 miles northeast of Hermosillo. It lies about 6 miles south of the famous El Carmen Mine, and 15 miles north of Santa Elena Mine, at an elevation of 3,500 ft. above sea level.

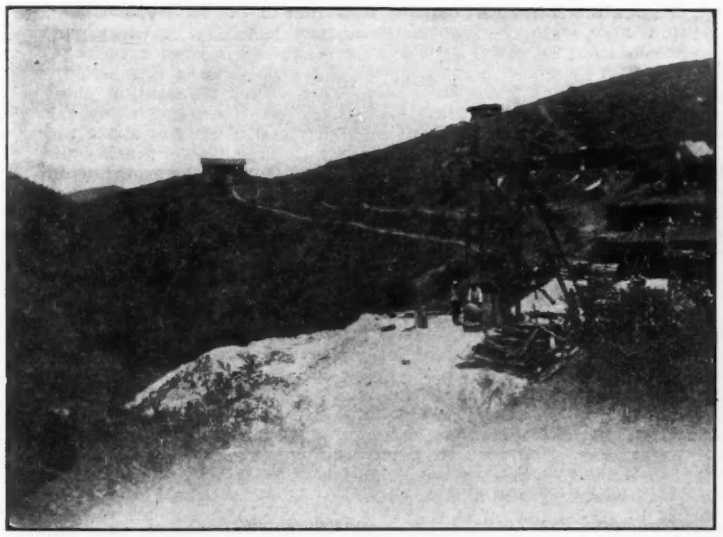
The mine was worked by the Spaniards in the early days down to 60 ft. below the surface, and as is characteristic with all the old mines in this country, all the openings on the surface had been carefully covered over, to try and efface all traces of work done. It was re-discovered in late years and worked at different times by "Gambusinos," who used to take out small quantities of ore and smelt in a crude way, selling the bullion recovered to the nearest storekeeper. In December last the above-mentioned syndicate bought the mine and commenced development work.

The vein is a true fissure trending east and west, and dipping south at about 82°. The veinstone consists chiefly of gray porphyry and quartz carrying argentiferous galena, together with a small percentage of iron pyrites, copper pyrites, mispickel and blendes. Argentite and kerargyrite also occur in small quantities in the quartz. The surrounding country is composed of various colored porphyries, the vein crossing the clearage at almost right angles.

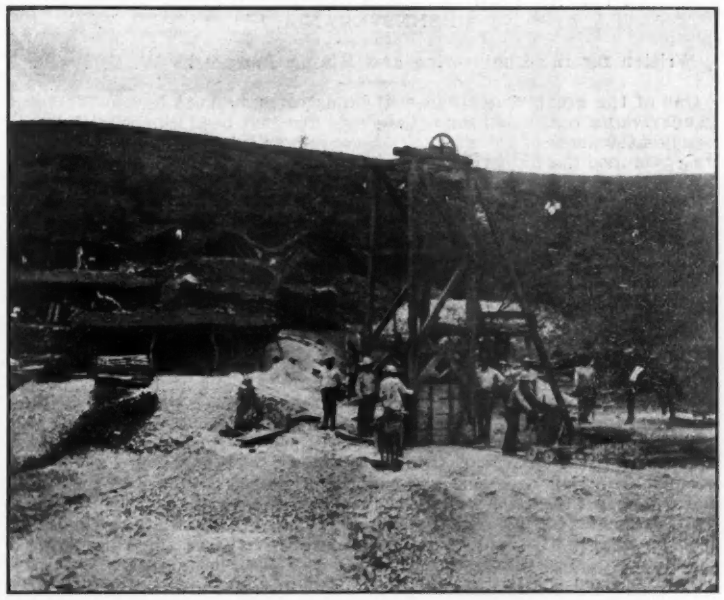
The mine is being opened up by a main vertical shaft which has reached a depth of 174 ft., and sinking is proceeding. Two levels have been driven from the main shaft at 50 ft. and 100 ft., respectively. The shaft is being sunk to 200 ft., where another level will be put in. Rich ore has been struck, both on the 50-ft. and 100-ft. levels, some of the assays going as high as 310 oz. silver and 25 per cent. lead. The average ore, however, roughly hand sorted, assays 110 oz. silver and 21 per cent. lead, and as far as the present development shows, the stoping width will average 8 ft. Development is now being rapidly pushed ahead on both levels, and an adit is being driven in the side of the hill to intersect the vein about 500 ft. east of the shaft.

A smelter capable of treating 8 tons per day has been ordered, and should be at work about the middle of January, 1901. When development work has been sufficiently forwarded it is proposed to erect a larger smelter with a concentrating plant.

The accompanying illustrations are reproduced from photographs. No. 1 shows the office and stores, and No. 2 the head-gear at the shaft. No. 3 is a general view of the mines and the dump.



No. 1.—OFFICE AND STORES, TEPALCATES MINE, MEXICO.



No. 2.—HEAD-GEAR, TEPALCATES MINE, MEXICO.

WATER POWER IN NORWAY.—The largest turbine installation in Norway is now being constructed on the River Glommen, which flows through central and southwestern parts into the Christian Fjord. The object of the undertaking is to supply Christiania and adjacent towns with electricity for lighting and motive purposes. Dams have been built at two waterfalls, with a canal 1,000 meters in length for feeding the turbines. The falls are estimated to yield 16,000 and 10,000 effective H. P. respectively. They are situated about 40 kms. from the capital, and close to the Trunk Railway, which is naturally a great advantage. The capital of the concern is 10,000,000 kroner, most of which has been taken up in England.

PIG IRON PRODUCTION IN GERMANY.—The output of the German blast furnaces in November was 710,018 metric tons, being 32,702 tons less than in October, but 45,630 tons more than in November, 1899. The total for the 11 months ending November 30th was, in metric tons:

	1899.		1900.		Changes.
	Tons.	Per ct.	Tons.	Per ct.	Tons.
Foundry iron	1,314,261	17.8	1,349,783	17.7	I. 35,522
Forge iron	1,533,179	20.8	1,458,703	19.1	D. 74,476
Bessemer pig	475,844	6.4	452,420	5.9	D. 23,424
Thomas (Basic) pig	4,060,956	55.0	4,370,046	57.3	I. 309,090
Totals	7,384,240	100.0	7,630,952	100.0	I. 246,712

The increase this year was 3.3 per cent., the gain being wholly in foundry irons and basic pig.

BURNING OIL IN CALIFORNIA.

Within the last few years the production of oil in California has increased to such an extent that railroads in that region found it possible to depend upon it for a locomotive fuel, says the "Railway Review." Trial of its fitness for this use was begun about the time that the oil became available in commercial quantities, and although its efficiency and low cost in comparison with coal (which costs about $7.50 a ton in that vicinity) was soon demonstrated, the limited supply retarded very extensive use until within the last couple of years. In the meanwhile the Santa Fe had been developing fields of its own and these, in connection with the developments of private corporations, have resulted in the provision of a supply of such magnitude as to justify the equipment of many locomotives in this district with oil-burning apparatus. In consequence there are at this time some 200 locomotives on the Santa Fe and Southern Pacific systems. Both lines are increasing the number of locomotives so equipped and the Santa Fe has for some time past been using 30,000 barrels of oil a month, while it recently closed a five years' contract with some of the heaviest oil producers whereby it was to be furnished with 750,000 barrels of oil a year—this in addition to the production of its own wells.

At the locomotive terminals the oil is handled a great deal after the manner of water—that is, the oil is stored in 30,000-gallon tanks, of which there are generally two, laid side by side on foundations which give them sufficient elevation to make the oil flow freely through spouts (similar to the usual water standpipe spout) into the tank on the locomotive tender, with which the usual coal space is supplanted. Where the tender of the locomotive being changed from a coal burner to an oil burner, is in good condition the oil tank is a separate tank which is merely set into the coal space, but where circumstances justify a special form of combination tank is built, in which the oil tank is surrounded by water except at the bottom.

While a pop valve on the oil tank is provided to guard against dangers of explosion from an accumulation of gases, a pressure of air not exceeding 5 lbs. is kept in the tank in order to make the oil flow freely to the burner. The burner used by the Santa Fe lines is a double chambered casting which is fastened on the mud ring midway between the frames. The oil coming from the tender, through a regulating valve controlled by the fireman, issues from the orifice of the upper chamber, which is 3 by ½ in. At this point it falls on and is caught up by the thin sheet of steam emerging from the orifice of the lower chamber, which is 3½ by 1/32 in. In this manner it is sprayed out into firebox. The burner used by the Southern Pacific lines has three chambers or passages—an upper one supplying oil, a lower one meeting the oil with a sheet of steam and a central passage throwing a sheet of air in between the spray. This mixture then emerges into the box from a single orifice. This burner is set through the rear water space above the mud ring. The points of difference lie in the Santa Fe burner tending to project the spray in an upward direction and to regulate the air supply by means of the ash pan dampers—these being larger air openings in the bricked floor of the firebox. The Southern Pacific burner tends to project the spray straight out into the box and the air supply is supplied partly in the mixture and in a less measure from the openings in the brickwork of the floor.

The Santa Fe has been experimenting with different arrangements of bricking in the firebox and a change of the location of the burner to the front mud ring. The necessity of bricking when using oil for fuel is due to several reasons. Without bricking the flame would be very severe on the sheets, especially as the degree of heat can be varied throughout its entire range of capacity almost instantly—which, of course, would render it possible for a careless crew to produce dire results. The floor must be bricked in sufficiently to reduce the air supply, but the principal reason for the brickwork is that it is essential for the spray to impinge upon an incandescent mass in order to give it best results. The bricking, when once heated, preserves sufficient heat to permit the flame to be shut off when drifting or at a station and yet ignite the spray when again started. The volume of flame is very great and the

arch is needed to retard its exit from the box as long as possible. With the burner at the front of the box the spray is projected in an opposite direction from the draft and will thus have to be pulled up and back over again before reaching the tubes. This affords opportunity to introduce more bricking to impede the progress of the flame without interfering with its ultimate exit, and taken all together is thought to much increase the efficiency of the firebox.

Oil as a locomotive fuel has many advantages aside from the relation its actual performance per mile as compared with coal, affords in point of cost. In carrying 7 tons of oil, the locomotive is taken to have the equivalent of a supply of a little over 10 tons of coal. Beyond this it must be kept in mind that the saving in the way of rapidity of fuel supply, the absence of manual labor in handling the fuel, the absence of cinders, etc., at the terminals, together with the absence of sparks, necessity for smoke and the ease and control of firing, all combine to effect a saving with and general preference for the oil fuel.

The fixtures necessary on the oil tank comprise a line of piping from the engine through which the air pressure is derived for making the oil flow readily. This pressure is kept from exceeding 5 lbs. in amount by a pop valve which also takes care of any pressure arising from the oil gases. An air gage is supplied at this point for registering purposes. The oil leaves the tender through a lift valve kept in suspension by a rope fastened to the cab. In case of a break-in-two the rope will break and permit the valve to drop and shut off the escape of oil to the ground. The results of service with this fuel have been so economical and satisfactory that the number of locomotives equipped to use it is being constantly augmented.

THE INDIANA AND CLARION COAL-FIELDS IN WESTERN PENNSYLVANIA.

Written for the Engineering and Mining Journal by W. G. Irwin.

One of the greatest deals in coal lands consummated in the Western Pennsylvania coal-fields for some years has just been closed, and by it nearly 4,000 acres of gas and coking coal lands lying in Indiana County, Pa., pass into the hands of the Buffalo, Rochester & Pittsburg Coal and Iron Company, a concern closely allied with the Buffalo, Rochester & Pittsburg Railroad. The newly purchased lands lie in White and Center townships in Indiana County and include a 4 and a 7-ft. vein. The sum of $113,563 was paid for this big purchase, and the holdings of this new company in this field are now nearly 10,000 acres.

Active operations in developing this new field will be begun at once and the output will soon become an important factor in the railroad coal market. The coal will be mined by drifts, it being near the surface. Other concerns are already operating in different parts of Indiana County. The coal-fields of this county are detached portions of the Connellsville coking seam, and during the past 10 or 15 years ovens have been in operation with varying success. The coal is not strictly a coking one, the excess of sulphur requiring the product to be washed before it is charged into the ovens. In times of depression in the coke market it has been the custom to ship raw coal from this field, the product being an excellent gas coal. During the past year or two all the ovens in the district have been in operation and many new plants have been erected, but the new Buffalo, Rochester & Pittsburg Coal and Iron Company will operate its mines exclusively for the shipment of raw coal.

Not far from the Indiana County field is another new coal-field which is seeing unusual activities. This is the Clarion County field where many hundred acres of coal lands have lately been purchased and new mines have been put in operation. The newest concern to enter this field is building a new railroad, the Clarion & Summerville, which will cost $200,000, and with its 12 miles of line will open up the new coal-field. The new road will be distinctively a coal road.

Both the Clarion and Indiana County fields are tributary to the Allegheny Valley coal-fields where some wonderful developments are now in progress. This section is destined to become a most important factor in the production of coal and coke so far as the Western Pennsylvania fields are concerned, and scores of operators are now seeking new lands in the Allegheny Valley.

USES OF PEAT.—Peat is used for a variety of purposes, such as pavements, papermaking, buildings and ornamental work, tanning leather, disinfectant and deodorizing and fertilizing. Peat ash abounds in carbonate, sulphurite and phosphate of lime. It can be mixed with coal-dust for fuel. It can also be used for making gunpowder, fireworks and gas. Its by-products are carbonate of ammonia, soda, vinegar, naphtha, paraffin, camphene oil, tar, sulphate of ammonia, acetate of lime, volatile oils, fixed oils, pyroxylic spirit, hydrocarbon oils, aniline colors. The finest candles used in the Catholic churches in Germany are manufactured from paraffin extracted from peat.

GRANITE SHIPMENTS IN 1900.—In 1900 the shipments were summarized as follows: Quincy Adams, 54,674,669 lbs. (62,934,477 lbs. in 1899); West Quincy, 86,001,503 lbs. (68,060,055 lbs. in 1899); Quarry Railroad, 105,697,120 lbs. (133,105,815 lbs. in 1899); total, 246,373,292 lbs., against 264,100,347 lbs. in 1899, showing a falling off of 17,727,055 lbs., or 7 per cent., in 1900. The decrease in the movement from Quincy Adams is due to the strike of the monument workers, as most of the business at this point is in finished stock. On the other hand, the increased shipments from West Quincy were credited to rough stock and grout. Reports from Vermont indicate that the movement of granite in 1900 showed an increase of fully 10 per cent. over the previous year.

COAL IN TONKIN.—The Indo-Chinese Pavilion at the Paris Exhibition contained the principal mineral specimens, including some of fuel, collected by M. Leclere, attached to the French Geological Survey, who was charged with a scientific mission to Tonkin; and he made the following observations in the course of a lecture on the subject to the Paris Geographical Society: Southern China, long known to possess numerous metalliferous deposits, has also been found to contain very extensive coal deposits of excellent quality that are worked by the native population; and the country has a flora identical with that of the Honghay and Kebao Collieries of Tonkin. As the Chinese deposits produce bituminous coals very rich in gas it is highly probable that systematic explorations would also reveal bituminous coal even in Upper Tonkin.

IRON AND STEEL PRODUCTION IN SWEDEN.—According to the returns compiled by the Association of Swedish Iron-masters, the production of iron and steel in Sweden for the nine months ending September 30th was as follows, in metric tons:

	1899.	1900.	Changes.	Per ct.
Pig iron	381,700	397,200	I. 15,500	4.1
Iron blooms	147,000	146,000	D. 1,000	0.7
Open-hearth steel ingots	120,100	146,300	I. 26,200	21.8
Bessemer steel ingots	71,200	70,100	D. 1,100	1.5

The total exports of iron and steel of all kinds for the nine months in 1900 were 243,600 tons, a decrease of 8,700 tons from the preceding year. The chief items of exports were 136,100 tons bar iron, 69,100 tons pig iron, 18,900 tons blooms, 5,600 tons steel ingots and 5,000 tons iron wire. Many contracts for export in 1901 have been made.

COAL IN ASIA MINOR.—Coal mined at Eregli (Heraclea), in Asia Minor, contains from 30 to 32 per cent. of volatile matter, while the ash content varies with the seams from 2 to 8 per cent. Although the coal of the basin generally is friable, such is not the case with that of Tchay-Damar and Uzulmes, says the London "Colliery Guardian." From Heraclea to Amastra the mines belong to the Turkish Civil List, which department concedes their working to the Turkish naval authorities, who in turn grant permits to work; and during the last few years the Minister of Marine has granted concessions, bounded by vertical planes, as usual. Beside the Heraclea Company only that of Courdji exports coal, chiefly to Greece, while the first-named company sends its coal to Egypt, Greece, Roumania, Bulgaria, Russia, Austria, and even France, its coke, which is highly esteemed, being supplied to the Societe des Hauts-Fourneaux et Fonderies de Marseille. Completion of the preparation plant at Zongouldak will permit the Heraclea Company to send away far cleaner coal than hitherto, the cost of which in the East is about the same as that of Newcastle coal. It is reported that some French capitalists intend to start two new collieries at Djidde and Kiosse-Aghzy, in the same region. It is also announced that the Turkish Government will form a coaling station on the Koum Island in the Red Sea, while any of the Powers may either make use of Turkey's coal or form an independent coaling station on the same island.

COPPER ORE IN SIKKIM.—In a recent report to the Foreign Office on the administration of Sikkim in the 1899-1900, the Political Officer refers as follows to some new finds of copper ore discovered during the year: "This year several new finds of copper ore have been discovered, viz., at Rhenok up the Rishi River, below Rinchenpong, and at Bodang Khani. A sample of ore from the latter place gives the following analysis: Iron, 27.00; copper, 3.55; tin, 0.35; lead, 1.53; arsenic, 0.24; zinc, 2.40; nickel, 0.70; alumina, 6.78; sulphur, 18.72; silicious matter, 38.02; water, 0.25. This ore on being assayed was found to contain: Silver, 1 oz. 19 dwt. 20 grs. per ton; gold, heavy trace. I have personally been over the locality, and find that the ore is distributed all over a hill extending to over a quarter of a mile square, and there appears to be a great quantity of ore. I think that this ore might be worked with advantage, but am not sufficiently acquainted with mining matters to know if the different metals can be separated at a profit or not. Water power, with a little expenditure, is available, and I am making inquiries as to the method of extracting the different metals.

"A large deposit of lime has also been found in the Rishi Valley below Rinchenpong. Coal was also found below Chakung and Pejak up the Rungeet Valley, but its quality is very bad, and it appears to be of no use. One or two pieces were good, and if worked to a lower level might turn out well, but of this I am doubtful. I think, however, the time has arrived to allow European agency to work any metals found in the State. Natives are not able to work the ores profitably. Several applications have been received, and I would recommend that concessions be given to work the ore in the State."

COST OF MINE DEVELOPMENT WORK.—An interesting table in the report of the Center Star Mining Company of Rossland, British Columbia, gives in much detail the cost of development work in that mine during the year ending September 30th, 1900. The figures of cost per linear foot are as follows:

Cost per foot.	Sinking main shaft.	Sinking small shafts.	Raising.	Drifting.
Drilling and blasting	$24.70	$20.13	$16.77	$7.25
Explosives	4.39	5.19	4.06	2.45
General mine supplies	2.78	1.47	1.76	0.92
Mine lighting—candles	0.74	0.41	0.47	0.25
Mine lighting—electric	0.90	....	0.17	0.20
Smithing	1.99	1.90	1.94	0.77
Trimming and shovelling—direct	10.12	....	0.31	0.74
Trimming and shovelling—apportioned	6.30	5.06	5.01	2.44
Timbering—labor	19.11	2.33	5.16	0.24
Timbering—material	5.31	0.50	0.70	0.05
Machine drill fittings	1.46	1.53	1.33	0.65
General mine labor	6.90	2.85	3.77	2.11
Hoisting, underground	10.44	8.69	....	....
Hoisting, main shaft	6.57	....	1.70	1.63
Compressed air	3.48	3.26	3.07	1.35
Mine ventilation	1.26	0.50	0.71	0.38
Assaying	0.12	0.13	0.32	0.24
Surveying	1.71	0.50	0.65	0.39
General expenses	15.35	4.56	7.61	4.76
Totals	$123.63	$59.01	$56.01	$26.82

The work done during the year was as follows: Sinking main shaft, 228.5 ft.; sinking small shafts, 103.5 ft.; raising, 903.5 ft.; drifting, 2,421 ft.; total, 3,656.5 ft. In the course of development work there were 4,035 tons of ore taken out.

MINING MACHINERY FOR THE PHILIPPINES.

Written for the Engineering and Mining Journal by "Manila."

There has been a very lively increase in the demand for American-made mining machinery and equipments during the past few months, and stocks of mining machinery, apparatus and tools are quite depleted. The call is principally for American patterns, as these are substantially built and are not so awkward as the average mining machines from some other countries. The American makers of mining machinery can be depended upon to send what the contract calls for, while the builders of some of the other nations have sent very crude and imperfect mining apparatus to the miners of the Philippines. I saw some mining machinery which has recently arrived from Spain, and the bearings of the machines plainly indicated that the machinery had been in service before, although it was painted and finished to represent new. The sleeves of a part of the journals were badly cut and scored as if used for a number of years. The same conditions prevailed in the shafting. Many of the cams and bolts were worn and weak and not suitable for the hard service intended. The result is that some of this imported mining machinery has already found its way into the junk heaps. On the other hand, such American-made machinery as has arrived here to date has been what is claimed for it. I saw some of the machines from a well-known American concern, and every machine was new. The result is that the majority of the miners of the archipelago are at present ordering through local houses for machines of American manufacture.

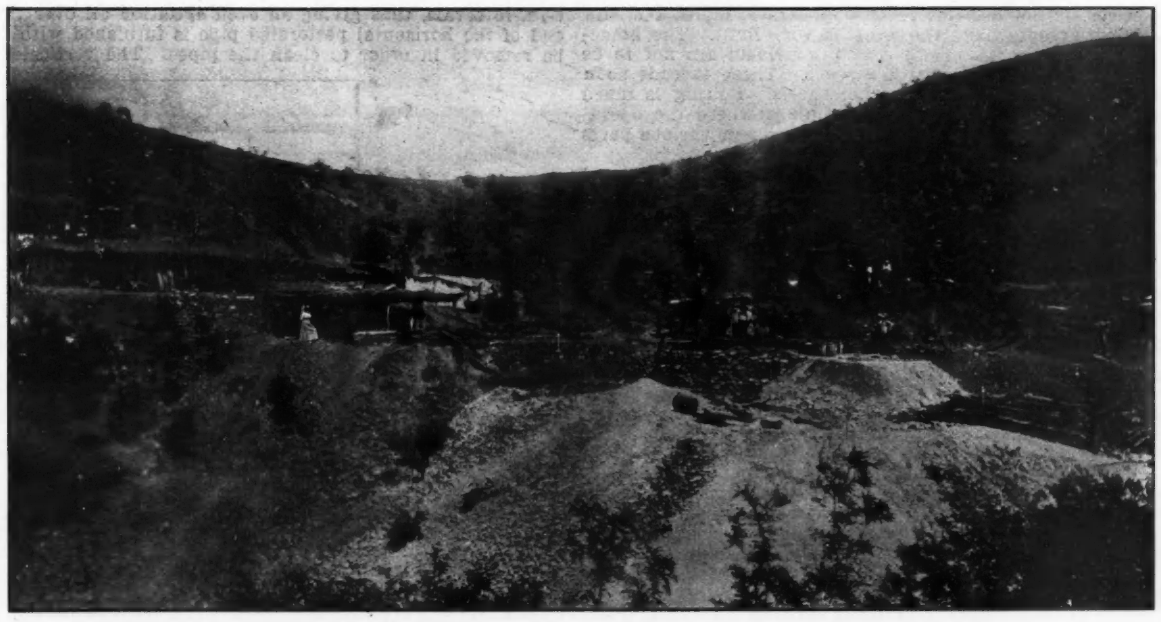
Stamps are in good request, and if some maker of these machines were able to send a good supply to these islands at once he would derive some rich returns. The ores of many of the mines call for the use of the stamps, and it has been almost impossible for some of the mining companies and private individuals to secure the stamps. At one mine I observed that they had rigged up some forms of stamps, using for the purpose some of the old and rusty machinery of discarded sugar mills. In one place they had arranged a series of rolls of sugar-cane crushers in such a way that the quartz was broken by passing through. But these home-made stamps, or substitutes for stamps, are inadequate, as might be expected in a country where the necessary tools are lacking for doing good mechanical work, while there is a shortage in metals and parts for making machines of any sort. Stamps should be sent here for the mines which are being rapidly developed, and mining machinery concerns of the United States will find it profitable to be represented here through some of the hardware or general machinery dealers. A good plan would be to correspond with the military commanding officer of every city and town in the islands. The list of garrisoned cities and towns can be secured from the Mining Bureau at Manila, which is in charge of a lieutenant of the United States Army. There are 310 of the cities and towns at present, and those which are located in the mining sections should be selected.

The Spanish had a form of concentrator in use in the mines operated by them, and the writer has seen some of these old types of machines in use in several of the mines. In most cases the mechanism is in very bad condition and the parts are patched and wired. There are a few machinery houses in Manila, and one has lately been established in Iloilo. In these places the writer saw forms of concentrators of English make which seemed to fill the bill, but I was told by some of the parties who were using them that the machinery was heavy, and it required considerable care. The tendency of most of the mining machinery makers of other countries seems to be to get the framework and the mechanical parts too heavy. I saw some concentrators from Germany which would consume a useless amount of power in their operation, due wholly to the excess of weight and bulk in the parts. The journals were much wider than required.

Pans and settlers are in good demand, and a supply should be sent to the mining agencies of the islands, for the reason that, according to the story told at the mines visited by your correspondent, the operators could not depend upon getting either pans or settlers when desired, and had to send to Japan, Germany, Spain or America for them. One owner of a mine informed me that he was delaying operations for months waiting for a cargo of small mining equipments from America, which he had expected daily for some weeks. According to present indications when that cargo arrives there will be such a good call for the devices, at high prices, that the miner will be tempted to turn some of the stock into cash.

The mines of the Philippines are far enough advanced in some cases to need hoists at the shafts. There are mines in which the shafts go deep into the earth and hoists are required for bringing the product to the surface. There are also coal mines worked now and the shafts in these are very poorly fitted with home-made contrivances for moving the coals. In some places the hoisting devices are operated by a turning beam and carabao power, as they were 100 years ago. The call for hoists and rolls of adaptable patterns is as good as for general mining machinery, and evidently the dealers will put in some of this line of apparatus before long.

The local miners have tried several methods of manufacturing screens, and in some cases have succeeded in turning out a passable sort of screen which does defective service at its best, but it is the only thing at hand, and must be used. There is need here for screens, and the miners are on the watch for the first consignment, with a view of buying up all that arrives. I have known the mining companies to employ men to wait about the wharves when a transport or other craft is expected to land at one of the commercial sea ports with mining machinery, for the sole purpose of making the first and highest bids for articles which he knows are worth much more than the original cost as soon as landed on Philippine soil within 100 miles of the mines.



NO. 3.—MINE AND DUMP, TEPALCATES MINE, MEXICO.

The writer has called at 40 or 50 different mines on various islands of the Philippine group and has failed to notice a properly constructed elevator in any one of them. The means for descending and ascending, and for raising ores to the surface and lowering supplies are very crude in some of the mines. Usually a form of platform is erected of wood, and this is fitted with iron rods to which a strong hempen, domestic-made rope is fitted. The platform is furnished with guides so as to keep it in the center of the shaft and steady it. The rope passes over home-made wood grooved wheels at the top of the shaft, and by means of counter-balancing weights it is possible for the cage to be raised and lowered with workmen or freight. But the whole affair is dangerous, and many accidents have been recorded. But there is not a mining cage for sale in the islands, so I am told. Miners have tried to purchase the devices but have failed to get any.

Smelter furnaces are also in demand, and any mining firm which is represented in the Philippines should see to it that a supply of these devices is put in. The native potters have made forms of crucibles and smelting devices which the miners are compelled to use for lack of something better. The potteries of the islands are one of the important industries, and they are at present run full time and are doing more business now than ever before.

Mining pumps of all kinds are wanted. I have known mining companies to pay enormous rates for pumps taken from the sailing craft which touch at the islands. I saw one pump removed from a steamer which was worth about $200. The mining concern had to have a pump or cease operations, and paid $1,500 gold for the pump. There are other instances of the demand for pumping machinery, and pump makers would do quite a lively and profitable business if they could arrange to have a stock of mining pumps kept with the leading machinery and supply stores of the principal mining sections.

To make a blower is somewhat beyond the facilities of the local machinists, and such mines as require the service of blowers must either stop operations or try to get along with the crude forms of cylinder blowers used by the natives. These blowers are intended for places in which the mining operations are very limited. The blowers are long cylinders made of wood, and about 4 ft. in diameter. There

is a piston provided, and this piston is fitted with a head. The head is flanged so as to permit of packing. A wheel is rigged up and a crank fitted so as to work the piston of the cylinder by means of a crank. This wheel is turned by animal traction as a rule, although they have steam or water power in some of the mines. The air is sucked in and forced out through a long bamboo pipe. But this method is very defective as compared to the rotary blowers. Modern descriptions of blowers are needed, and the mining companies will gladly pay good values for them delivered at the nearest sea port.

In a country where there is much Manila hemp rope made it may seem strange that there should be a demand for the imported article. But the ropes of domestic make are unsuitable for any work in the mines except some of the slow processes of haulage. The hemp ropes will wear out very quickly on grooved wheels in power transmission in mines. The locally made hemp rope is all twisted in strands, and these strands are worked into rope by hand methods, resulting in a loose and unreliable rope. Some of the mines have put in power and transmission systems in which a continuous rope is used, and this sort calls particularly for good work. In other mines they are using the single-strand rope on the grooved wheels. In either case better ropes are required than can be furnished in the local markets, and therefore the item of rope supply for the mines should not be overlooked. Cotton ropes have been called for in some cases, while in others wire cables are demanded. Some of the richer mines, representing mining concerns in America, are putting in wire-cable systems for both power transmission and for hauling, at considerable cost. Wire cables are scarce in this country and prices are high.

Leather belting, as well as canvas and rubber belting, is in demand by the miners of the islands. There are some local tanners in the islands who attempt to turn out belting made from the hides of carabao and cattle, but this belting, although inexpensive as compared with United States prices, is not suitable for use in mines, or, in fact, for any power purposes except where the work is very light. The home-made belting is not put together with rivets, for rivets are not to be had, and the natives sew the laps with threads. These threads soon cut off, and the laps open and flap on the wheels. Belting is much needed by the miners in the more extensive mines where the operations call for the power service to be distributed through various parts of the works.

Engines are also in good demand by the mining corporations, and such dealers as have good boilers and engines on hand can turn their money quickly at good profits. I know of one machinery supply concern that has been receiving three boilers and engines from America weekly, and these are disposed of as soon as they arrive at rich profits. Portable engines are much wanted, for some of the mining operations are shifted about a good deal. Engines and boilers from 25 to 300 H. P. seem to sell the best. Water wheels are called for by some of the mining concerns, for many of the mines are in the mountainous sections, where waterfalls can be dammed and a head of water obtained sufficient to drive turbine wheels to good advantage. In a number of places I noticed that the miners had rigged up overshot wheels, entirely of wood, and were getting good results from these. The turbine, however, is the kind required. Shafting should be sent along with the engines and wheels, for there is a great scarcity of this article in the islands. I have seen shafting sold here at enormous rates. Very often there is none to be had, and in very many mines one will see wood shafts running. The wood shafts are usually sections of hard-wood trees, the full diameter being used, and the portions bearing in the journals turned down to a smaller diameter. The couplings are made by keying and bolting on large head pieces or flanges and bolting the same together firmly. In this way some pretty good shafts are run.

There is plenty of cocoanut oil to be had in the Philippines, but this oil is not suitable for use on the bearings of mining machinery. The cocoanut oil gums and collects foreign matter, resulting finally in clogging the journals. The mining supply firms should carry lines of lubricating oils for the special purpose of furnishing miners. Oils which arrive here from America are not packed well, and often the five-gallon tin cans get here with one or two gallons leaked out through rents made in the tin in shipping. The wood cases should be heavier for protecting the tin.

General hardware for the mines, such as bolts, screws, nuts, rods, wire, spikes, etc., is much wanted. The native smiths make a form of spike which is exceedingly crude, and the only way that it can be driven is to bore out the hole for it first. The natives also shape out forms of nails which they sell at so much per dozen. The cost is high, as each nail is hand forged. Screws of Filipino make are also costly, and in some cases the threads are worked out by hand files, representing much labor.

MINERS' PENSIONS IN BELGIUM.—A bill has been brought before the Belgian Chamber of Representatives for providing pensions of 600 fr. ($120) per annum for colliery hands over 50 years of age if they have worked underground and 55 if on the surface, the necessary fund to be provided by a deduction of 3 per cent. from the wages, the contribution of a similar amount by the coal operators and the remainder by the State.

AMERICAN LOCOMOTIVES IN INDIA.—The battle of the English and American locomotives has once more been fought; this time in Calcutta and the Americans have again prevailed, says "Indian Engineering." The Port Commissioners were in want of 9 locomotives and 150 wagons for which they tendered in the open market. The lowest English tender for engines was that of Neilson Reid & Company at £1,545 each, with delivery in nine months. Against this there was the American offer of the Pittsburg Company to deliver the engines in Calcutta in six months at a cost of £1,378 each. Cheapness being a prime consideration with the Commissioners, they accepted the American tender. They have also decided to have the wagons built in the United States, for to purchase them in England would be ruinous.

THE AGITATION PROCESS FOR CYANIDING SLIMES.

Written for the Engineering and Mining Journal by Charles S. Hurter.

The problem that presented itself to the Cochiti Gold Mining Company, whose mines are at Bland, New Mexico, was how to treat successfully a low-grade slime without going to too great expense. About 96 per cent. of the slimes, or more properly speaking, the dust, will pass through a 100-mesh screen. The dust is drawn from the pulp by means of a fan after it has passed through the finishing rolls and before it goes to the screens. The air current passes down through the rolls and through the roll pit. From the fan the dust passes to a cyclone settler from which it is drawn off into bins.

The Pelatan-Clerici process was tried here, but it proved to be too expensive for this class of ore. Filter presses could not be used on account of the expense. Messrs. V. B. Sherrod, a cyanide expert, and C. A. Stephens, superintendent of the mill and cyanide department, succeeded in devising an agitation process whereby 80 per cent. of the total values of both gold and silver in the slimes are recovered at a cost not exceeding $1 per ton.

The agitator used is a mixture of steam and compressed air. The alone was used at first, but they were troubled by the pipes clogging badly, and the solution becoming too cold to give a good extraction of values in a reasonable length of time. When steam was introduced with the air the result was apparent immediately. A greater extraction in a shorter time was obtained and the pipes kept in better shape. The agitation tank shown in the sketch, Fig. 1, will take a charge of from 3 to 3½ tons of pulp and 6 tons of solution. The steam and air pass first into a 3-in. distributing pipe, and from it to 1-in. pipes that pass through the tank as close to the bottom as possible. These pipes are placed 6 in. apart, and have 1/16-in. perforations on the underside at 6-in. intervals, thus giving an even agitation all over the tank. Each end of the horizontal perforated pipe is furnished with a plug that can be removed in order to clean the pipes. The vertical 1-in. pipes con-

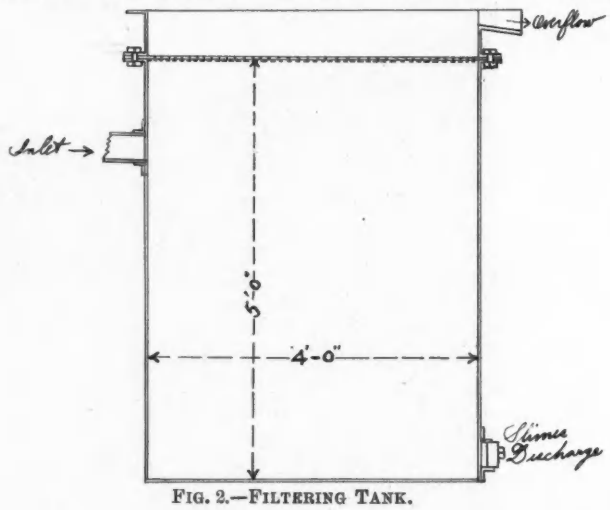


FIG. 2.—FILTERING TANK.

necting each horizontal pipe with the 3-in. distributing pipes, are furnished with valves marked c in the sketch. To clean the pipes all c valves are closed and the plugs at the ends, marked B, are removed. Then each C valve is opened full and the entire pressure from the boilers and compressor is used to blow each pipe clear of any slime that may have settled in it. If in any pipe this does not suffice, the C valve is closed and the plug at the end, marked A, is removed when the pipe can be freed from all obstructions by means of a stiff wire.

The air is delivered to the 3-in. pipe at a pressure of about 60 lbs. per square inch, and the steam at a pressure of about 30 lbs. Better results were obtained with a 3-in. distributing pipe and 1-in. pipes in the tanks than with smaller pipes, because the large pipes act as a receiver or reservoir. The actual power required is not over one-tenth of 1 H. P. per ton per day, as only enough steam and air are used to keep the pulp agitating gently. It is best, for convenience sake, to have a hose connected with the air supply, to assist in breaking up any masses of slime that may have settled.

The solution from the barren solution sump is delivered under pressure at the tanks, so that it can be used for sluicing the dry dust from the bins into the agitating tanks and also to sluice the agitating tanks clean after the main part of the pulp has been discharged. The first reason for sluicing with cyanide solution is to avoid an overstock of solution. The second is that in cleaning the agitation tanks it prevents the solution from being diluted to such an extent that it might interfere with the precipitation of the gold and silver by means of zinc. It was found that if the tanks were loaded by shoveling that the dust would settle to the bottom in a mass and that it was practically impossible to get it into proper circulation in the syanide solution.

Twenty-four hours are sufficient to get 94 per cent. of the total values in solution, using a solution of a strength of 3 lbs. of cyanide to the ton. However, it was only possible to recover 80 per cent. of the total values without filter presses. About 60 lbs. of lime are suspended at the surface of the solution in a bucket of coarse wire screen, allowing full access of the cyanide solution. This is to prevent the lime from sinking to the bottom of the tank, where it would get covered with pulp and be of no use. A large excess of lime is used, but the action is two-fold. In addition to neutralizing any acidity that may be in the ore, it was found that when a large excess of lime was used that the slimes settled in the settlers much more quickly and completely than they otherwise would.

The pulp is run from the agitation tanks through a set of wire settling tanks 4 by 4 by 6 ft. in size, placed in series. From these the solution passes through a series of three upward filtering tanks. From those tanks the solution is run through precipitation boxes filled with zinc shavings. Four boxes to a set are sufficient to precipitate practically all the values in solution. Each settling tank is so arranged that when full of settled slimes, it can be cut out of the series and sluiced, without interfering with the working of the other tanks. By this part of the process between 70 and 75 per cent. of the total values in the pulp are recovered. Fig. 2 shows an upward filtering tank.

In order to save as much of the gold and silver bearing solution remaining with the slimes in the settling tanks as possible when a settler is filled with settled slimes, it is cut out of the system and sluiced by means of a water jet into a 12 by 5-ft. circular decanting tank. The slimes are allowed to settle here from 12 to 24 hours, when the clear solution is drawn off by means of plugs and mixed with the solution

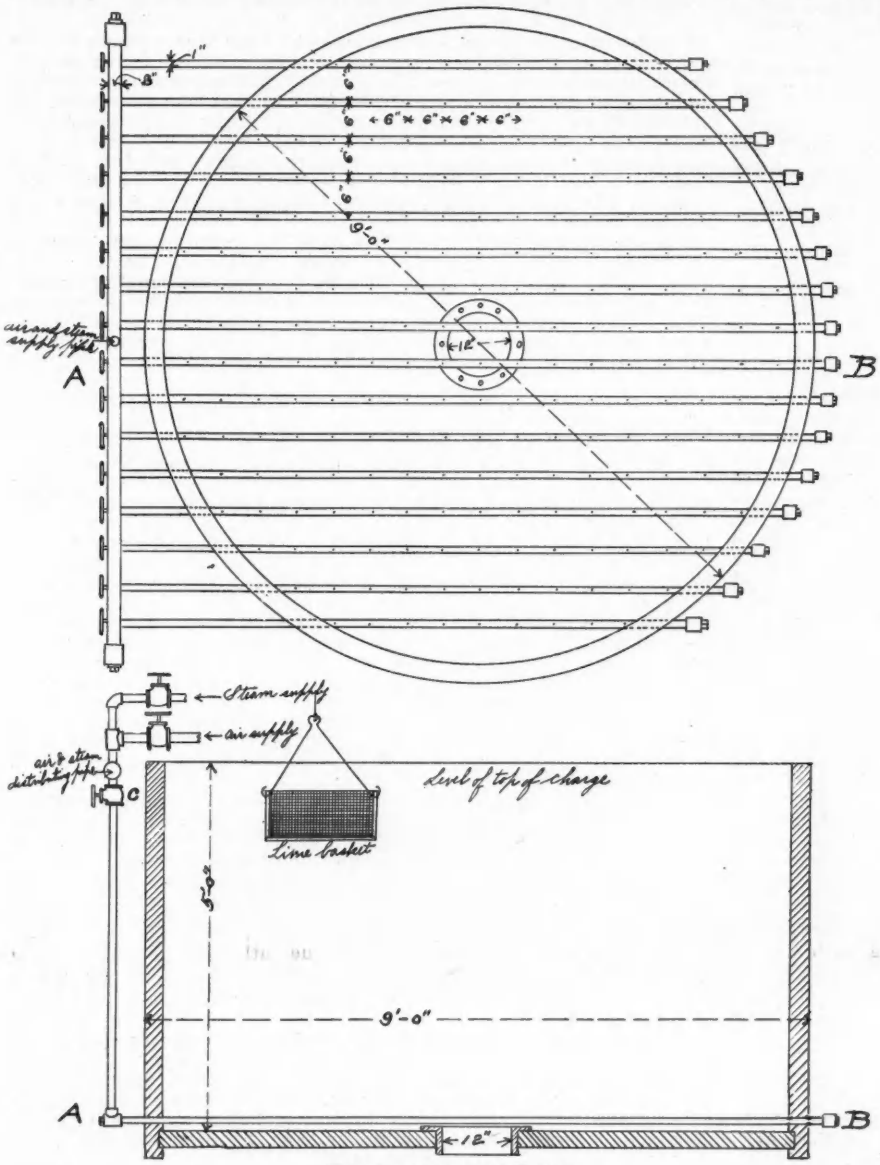


FIG. 1.—AGITATING TANK.

from the settling tanks before it passes through the filters. This is all the washing that the slimes get.

By this enough gold and silver is recovered to bring the total extraction up to about 80 per cent. The expense required to recover the remainder of the 94 per cent. of dissolved precious metals by means of filter presses or washing by agitation, settling and decantation, would be too great to prevent any profit from them.

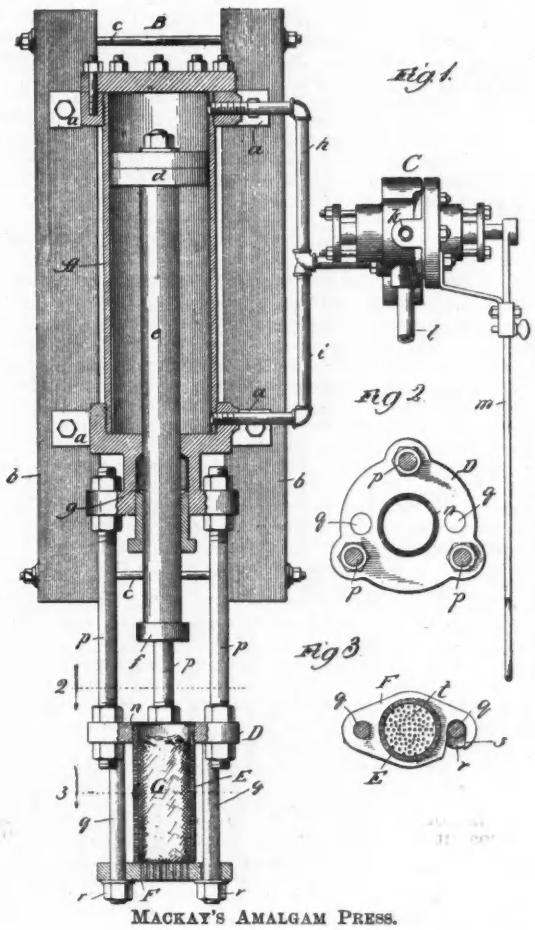
With regard to the cost of the work, one man, working a 10-hour shift, can easily do all the work required to run a 20-ton plant. For agitation not over one-tenth of 1 H. P. per ton per day is required. The cyanide consumption is about 1 lb. per ton of pulp, most of which is carried away mechanically with the tailings. The lime consumption is 20 lbs. per ton, the zinc consumption 1 lb. per ton of pulp. The cost of treatment can be tabulated as follows:

Cyanide, 1 lb. at 31c	$0.31
Lime, 20 lbs. at $18 per ton	0.18
Zinc, 1 lb. at 12c	0.12
Tramming	0.04
Power, 0.1 H. P. at 40c	0.04
Labor, 0.05 day at $3.50	0.175
Extras, repairs, smelting, etc	0.135
Total cost per ton of pulp treated	$1.00

One can easily see the advantages of the combination, steam and air method, over mechanical agitation, which consists of the absence of machinery, belts, etc., with breakable parts, the consequential small amount of repairs needed, the small amount of power required per ton of pulp to secure perfect agitation and the general all-around cheapness of the entire process.

MACKAY'S AMALGAM PRESS.

The accompanying illustration shows a convenient device recently patented (United States Patent No. 664,330) by Angus Mackay, of Douglas Island, Alaska. It is intended to provide a powerful and convenient device for use in expressing the surplus quicksilver from amalgam. In the drawings, Fig. 1 is a vertical section of the device; Figs. 2 and 3 are plan sections taken on lines 2 and 3, respectively, of Fig. 1. A is a vertically-disposed cylinder fastened, as by means of the arms, a, thereon, to a support, B. The support may be of any suitable construction which will hold the device in a position convenient for operation, and



MACKAY'S AMALGAM PRESS.

the construction shown in the drawings comprises two vertical blocks, b, held together with tie-bolts, c, and adapted to be secured against a wall or the like. Working in the cylinder is a ram consisting of a piston, d, on a stem, e, provided at its lower end, preferably, with a head, f. The upper end of the cylinder is closed, and the stem, e, passes through a stuffing-box and gland, g, in the lower end of the cylinder. In the upper and lower ends of the cylinder are ports communicating with the pipes, h i, leading thereto from a valve device, C.

The valve device, C, is a four-way valve of usual construction, having an inlet-port, k, exhaust, l, ports communicating with the pipes, h i, and a valve operated by means of a handle, m, which opens communication between the port, k, and pipe, h or i, and at the same time opens communication between the other pipe, h or i, and the exhaust, l. The valve may also be turned to a position to close both the ports or the pipes, h i. The port, k, communicates by means of a suitable pipe (not shown) with a fluid-pressure supplier. The fluid may be steam, air or water under pressure. Any suitable four-way valve may be employed which by the turning of a handle, such as the handle, m, will operate to direct the fluid-pressure into the cylinder, A, either above or below the piston, d, as desired, at the same time exhausting from the other side of the piston, and wherein the handle may be turned to a neutral position, whereby the pressure may be maintained neutral on both sides of the piston. D is a plate having central threaded opening, n, and rigidly supported by three rods or bolts, p, fastened at their upper ends

in ears at the under side of the cylinder, A, and fastened at their lower ends to the said plate. E is a wall or cylinder provided with numerous perforations screwed into the opening, n, and thus secured to the plate, D. Extending downward from the plate, D, at opposite sides of the cylinder, E, are bolts or rods, q, threaded along their lower end portions and carrying nuts, r. F is a base-plate for the cylinder, E, provided toward one end with an opening at which it loosely surrounds one rod, q, and rests upon the nut, r, thereof to swing in the horizontal plane. In the opposite end of the plate, F, is a recess, s, to receive the other rod, q, and at which the plate rests upon the nut, r, on said rod when the plate is swung to its closed position. In that part of the plate, F, which forms the bottom of the cylinder is a series of openings, t. The receptacle formed by the cylinder, E, and plate, F, is in direct line with the ram, and the head, f, of the latter fits the cylinder with just sufficient looseness to move it without material friction.

In operation the ram is raised to the position shown, and the plate, F, is swung to its closed position and tightened against the lower end of the cylinder, E, by means of the nuts, r. A bag, G, of canvas or other suitable porous and flexible material, containing the gold or silver or other amalgam, is introduced in the foraminous receptacle through its lower end previously to swinging the plate, F, to its closed position, and the handle, m, is then moved to direct the fluid-pressure into the cylinder, A, above the piston and relieve the pressure below the piston. This causes the ram to be plunged downward into the receptacle and squeeze out from the amalgam the surplus quicksilver, which escapes through the perforations in the cylinder and plate, F. When this operation is completed, the valve, C, may be turned to the neutral position, the nuts, r, loosened, and the plate, F, swung from beneath the cylinder, E, after which the piston may be again forced down to cause the ram to discharge the bag, G, and contents from the receptacle. The handle, m, is then moved to direct pressure into the lower part of the cylinder, A, and exhaust the upper part to move the ram to its raised position.

ABSTRACTS OF OFFICIAL REPORTS.

Mount Lyell Mining and Railway Company, Tasmania.

The latest report of this company, as issued from the London office, covers the half-year ending September 30th, 1900. The net profit for the half-year amounted to £113,746, after providing for Tasmanian dividend tax £3,697; depreciation of the company's plant, £18,954; mine prospecting not included in mine preparatory works overburden account, £4,423. The sum of £137,500 was distributed to shareholders during the half-year in the form of two dividends of 4s. each, payable April 2d and July 2d, together with two bonuses of 1s. each on the respective dates. The dividend and bonus payable April 2d were paid out of the profits earned during the previous half-year, ended March 31st. A dividend of 2s. was declared August 30th, payable October 1st, out of profits earned during the half-year under review. This reduced distribution per share was due to the purchase of the South Tharsis Mine, and to the continued lower grade of ore treated.

The total ore smelted was 167,221 tons. Of this 144,301 tons were from the Mount Lyell Mine, 126,240 tons coming from the open cut and 18,061 tons from the underground workings. The remaining 22,920 tons was purchased ore. In addition to this the furnaces treated 2,089 tons flue dust, 33,534 tons of first matte, 5,219 tons converter slags and 1,066 tons converter linings; making a total charge of 209,129 tons. The product was 10,349 tons matte. From this the converters produced 4,768 tons blister copper, containing 4,713 tons fine copper, 331,622 oz. silver and 11,895 oz. gold. The average yield, based on 167,221 tons ore treated was 2.82 per cent. copper and 1.98 oz. silver and 0.07 oz. gold to the ton.

The work done during the half-year included 64 ft. sinking and 1,181 ft. drifting and cross-cutting. The ore broken was: Open cuts, 125,071 tons; underground, 17,750 tons; total, 142,821 tons, dry weight.

The cost of producing blister copper per ton of ore smelted was as follows, reduced to American currency:

Mining operations	$0.8200
Removal of overburden	0.4800
Smelting operations	3.5978
Converting operations	0.4858
Total	$5.3836

This is 15.16c. per ton less than in the preceding half-year.

The manager's report says: "The grade of the ore has continued to be low, and is in fact somewhat lower this time than in the previous half-year. To the reasons already given, there must be added the circumstance that the upper benches are now well in the heart of the deposit and gradually approaching closer to the hanging wall, which, as was previously known, is of lower grade than the footwall. However, the present satisfactory market price of copper permits of excavating the lower grades as they stand, up to the very hanging wall rock, the possibility of which was not anticipated formerly. At that time it was expected that it would be necessary to allow certain portions of the hanging wall pyrites to remain untouched. Needless to say the extraction of all the ore, whenever payable, recommends itself in place of neglecting any portion of the deposit."

Some delay in the work was caused by a fire in the smelting works, which caused a loss appraised at £13,250. Most of the best machinery was saved.

The directors' report says: "With a view to obtaining supplies of metal-bearing fluxes to replace as far as possible the barren fluxes hitherto used by the company in its smelting operations, the directors, on the recommendation of the general manager, purchased during the half-year the South Tharsis Mines. The total amount paid for the property, including machinery, commission, etc., was £46,742. Immediately on the completion of the transfer of the lease, preparations were made for opening up the property so as to facilitate winning the flux by the open-cut system, and its subsequent despatch to the furnaces. Operations were not sufficiently far advanced to permit of this flux being despatched during the half-year, but temporary arrangements are now completed which permit of regular consignments being made.

"The Port Kembla Coking Plant continues to give satisfaction, but it has been found necessary to increase its capacity by the erection of an additional 12 ovens, making 62 in all. The additional ovens are now in course of erection, and, when completed, will render the output of coke equal to the smelting requirements. The coke maintains the quality which renders it so suitable for the company's operations, and the present increased price ruling for coke still further emphasizes the saving in the cost of the coke supplies resulting from the erection of the works.

"The connection between the company's railroad and the Government (Strahan—Zeehan) Railway has been recently completed by the Government, thus rendering the reciprocal running of trains possible over the respective lines, thereby securing great traffic advantages. The completion of the Emu Bay Company's line to Zeehan, which is expected at an early date, will give unbroken connection between Queenstown and Burnie, and very shortly with the whole of the Tasmanian railways."

VIRGINIA IRON, COAL & COKE COMPANY'S ELECTRIC PLANT.

The introduction of the electric motor into the power plants of iron and coal properties has been one of the most notable features in later electrical developments. One of the recent installments is the electrical equipment of the Virginia Iron, Coal and Coke Company at Georgel, Va. Two Westinghouse belt-driven generators of 150-Kw. capacity each, are each driven by a Harrisburg standard engine of 250 H. P., the engines running at 250 revolutions per minute and the generators at 550. Both of these units give direct current at 550 volts, and there is also one Westinghouse alternator of 45-Kw. capacity, belted to a 60 H. P. Harrisburg standard engine.

Steam is supplied by six 150 H. P. boilers, the steam pressure being 100 lbs. These were built by the Harrisburg Foundry and Machine Company. In the mines four 12-ton Baldwin-Westinghouse mining locomotives are employed; each locomotive has a double motor equipment of 70 H. P. total capacity. There are also two coke carriers, each carrying a single motor equipment of 35 H. P. The main switchboards are of the familiar Westinghouse type.

THE MINES BUILDING AT THE PAN-AMERICAN EXPOSITION.

The accompanying illustration shows the exterior of the building provided for the exhibit of mines and metallurgy at the Pan-American Exposition at Buffalo. The preparations for this exposition are now well advanced, and the buildings are approaching completion.

The building to be devoted to mining exhibits is one of a group of three magnificent structures arranged in the form of a horseshoe, at the western boundary of the Esplanade. The Mines Building is the southernmost of the group and is connected with the Horticultural Building by one of the conservatories which flank the Horticultural Building on the north and south. It is 150 ft. square and at each of the four corners it has a square tower 90 ft. high. The eastern facade, looking upon the Esplanade, shows three high recessed arches between the towers, forming an open loggia elaborately and beautifully ornamented with plastic detail and decorated in brilliant colors. From this loggia are the main entrances to the building. There are also entrances in the corner towers. The ornamental detail is very picturesque and interesting. The design is by Peabody & Stearns, of Boston.

Material for the mining exhibit will be drawn from all parts of the United States and from every country of South and Central America, Canada and Mexico. While the exhibits will be under the auspices of the various governments, many individuals and mining companies will be represented by individual displays representing their special interests. The list of minerals represented will be a large one, comprising every production, both useful and ornamental, which is procured from beneath the surface of the earth. Ores and their treatment, and machinery for manipulating ores will be a feature of interest. Specimens of large and important beds of valuable substances will be shown, together with data representing the extent and value of the deposits.

The exhibits will illustrate besides the important metals—iron, gold, silver, lead, zinc, etc.—other mineral deposits of great value, such as coal, building stone, marble, and precious stones, such as onyx, agate, jasper, etc.; deposits of grinding and polishing substances, corundum and certain clays; other deposits including asbestos, graphite, mica, kaolin, lime, cement, gypsum, sulphur, a variety of salts, fertilizers, manganese, aluminum clays, etc.

Machinery for quarrying, cutting and carving stone; tunneling and lifting machinery, together with a great variety of appliances for underground work, such as boring, drilling, blasting, lighting, telephoning, etc., will be shown in great variety. The object is to make the most complete and instructive exhibit possible.

INDIAN PIG IRON IN AUSTRALIA.—It will be somewhat startling news to most people in this country to know that Bengal pig iron is being sold, on equal terms with Middlesborough iron, in Sydney and in Melbourne, in Hong Kong, and in Shanghai, says the "Iron and Coal Trades Review," of London. Yet such is the case, and it is said that the Bengal iron is much liked and has come to stay. To the Bengal Iron and Steel Company, Limited, belongs the credit of such enterprise. The company is of English origin.

DEMAND FOR SULPHATE OF COPPER IN IRELAND.—United States Consul M. T. Price writes from Belfast, Ireland, under date of December 13th, as follows: "Owing to an increasing trade in sulphate of copper in this country, I have been appealed to by Messrs. John Lytle & Sons, of this city, to place them in communication with firms in the United States desirous of exporting this commodity. The firm of Messrs. Lytle & Sons is perhaps the largest of its kind in Ireland, manufacturing artificial manure and dealing in grass and clover seeds to a very wide extent. They wish to import the sulphate of copper for selling in its raw state—also for the making of spraying preparations—and desire 99 per cent. purity."

THE CHLORINATION OF GOLD ORES AT MOUNT MORGAN, QUEENSLAND.*

By Ernest Willoughby Nardin.

The Hall-Richard process of chlorination in use at Mount Morgan, although carried out in vats, differs essentially from the usual method, known as Plattner's process, in which chlorine gas is passed through the ore, which has been previously damped and placed in vats. The process, which is described in this paper, consists in subjecting the ore to the action of a solution of chlorine gas in water, locally termed solution; this dissolves the gold, which is subsequently precipitated by passing the liquor through charcoal. The advantages of the process are the ease with which it can be applied and the very satisfactory results obtained, both in respect to the percentage of gold extracted and the cost of treatment. Altogether, at the different works at Mount Morgan, about 18,000 tons of ore are treated monthly; but for the purposes of this paper it will be sufficient to describe the process as carried out at the new West Works plant, which treats over 100,000 tons of low-grade ore annually.

The ore sent to the works is taken from the old mine-tips, and consists of a mixture of sinter, kaolin, sugary quartz and a small percentage of hard ironstone. This mixture carries a small amount of sulphur, and when crushed and roasted weighs about 75 lbs. per cu. ft. The average gold contents are 11 dwts. per ton, and the gold exists in a fine state, making it suitable for chlorination. The ore is crushed dry in Krupp ball mills to pass a 400-mesh screen, is then roasted in steel revolving furnaces, and is stored in main hoppers at the back of and above the vats. For convenience of construction and running, the works were built in four separate sections, working independently, with an auxiliary section containing the engines, boilers, stills, towers, storage-tanks, filters, pumps, etc., for the whole plant.

The chlorination portion of the plant comprises the following: 16 vats, each of 100 tons capacity, 4 chlorine stills, 1 set of towers, 4 solution storage-tanks, 4 gold-liquor storage-tanks, 12 charcoal filters, 3 vacuum pumps, 3 force pumps, and 1 engine for driving the pumps. The general arrangement of the chlorination portion of the auxiliary section and of No. 1 section is shown in plan in Fig. 1. In elevation, the vats and pumps are on the same level, and are 41 ft. 6 in. below the roasting-floor. The stills and towers are 14 ft. below the same floor; the storage-tanks are 11 ft. 9 in. lower, while the filters are 6 ft. 6 in. below the tanks. It will be convenient to first describe the arrangement and working of these different portions of the plant, and then to follow the treatment of a vat as it actually takes place.

The Stills.—These are the ordinary imported hydrochloric-acid stills, octagonal in shape, 4 ft. 3 in. in width and 4 ft. in height internally, and are built of slabs of Yorkshire flagstone 5 in. thick. All the joints are made with round India-rubber, 1 in. in diameter, fitted into grooves in the stone slabs, and the whole is bound together by three rows of iron clips and bolts. No stirrer is used, and the charging hole is closed by a lead cover with a water joint. Steam is admitted by two vulcanite pipes, and the gas outlet-pipe leading to the towers is of earthenware, well boiled in a tar mixture. The joints of these pipes, and all others carrying solution, are made with a mixture of tar, fire-clay and oakum, worked to a thick paste and squeezed into the joints by iron clips and bolts.

The chlorine is generated from sulphuric acid, manganese dioxide and common salt. The first is made at the company's works, from imported sulphur, at a cost of $15.60 per ton; the manganese ore, containing about 72 per cent. of black oxide, costs $24.48 per ton, and the salt costs $19.44 per ton. In preparing this for the stills, the manganese ore is first crushed through a 3,000-mesh screen, is then mixed with the proper quantity of salt, and is further ground in a Chilean mill. The mixture is then put up into bags, each weighing 240 lbs. In charging the still, two bags of this mixture are charged through a funnel pipe from the floor above; the requisite quantity of sulphuric acid is run in from a small torage-tank, fitted with a gauge-glass, and the steam is turned on. This charge takes about four hours to work out, and, as the solution has to be kept at a certain strength, a small test-pipe is inserted in the main leading from the towers, for the purpose of testing the working of the still; the water supplied to the towers is then regulated accordingly.

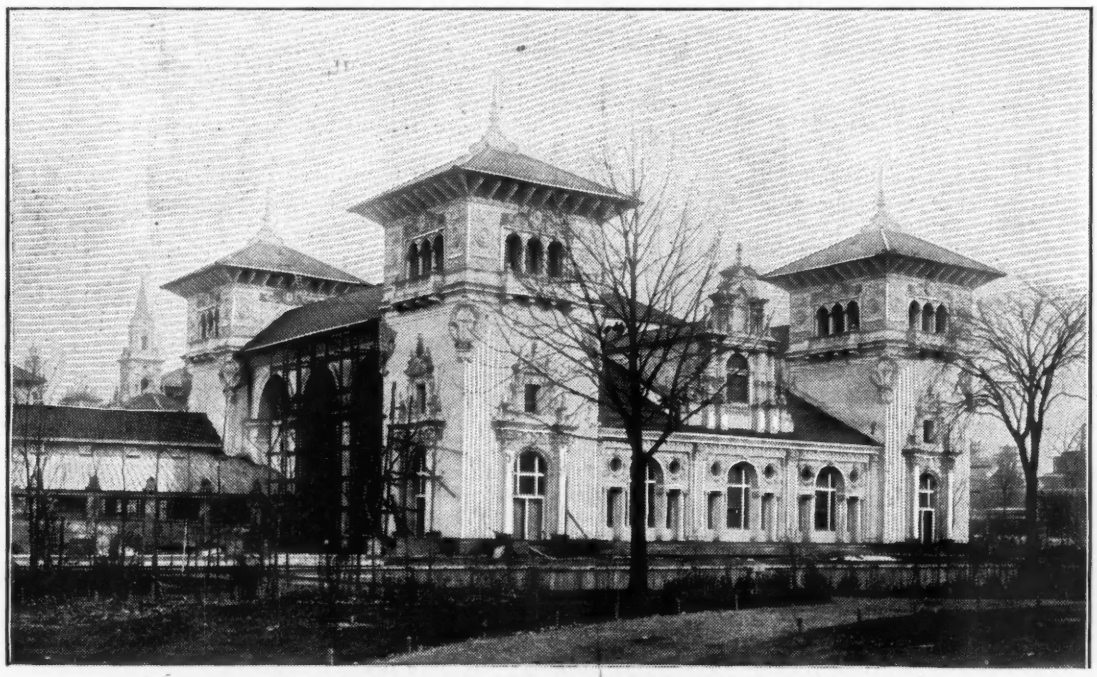
The Towers.—These are built of concrete, and consist of four circular towers grouped in one nest, Fig. 2; the internal diameter of each tower is 2 ft. 3 in., and the height is 20 ft.; each tower is packed to within 1 ft. of the top with glass bottles and old assay crucibles. The chlorine gas from two stills enters the bottom of No. 1 tower, passes up to the top, and thence by a pipe to the bottom of No. 2; in its passage upward it meets a stream of water, which absorbs it and forms the solution. The other two stills are connected in the same way to the remaining two towers. The solution outlets are at the bottom and lead into a main, through which the solution gravitates to the storage-tanks on the next bench. The towers are faced inside with neat cement, well coated with hot tar and pitch; the tops are fitted with leaden dishes, having a number of 1-in. lead pipes inserted; the latter stand up 1 in. above the bottom of the dish, and are covered by small leaden bells perforated at the lower edge; this forms a water joint, and at the same time allows the water from the main to pass through to the towers.

The Solution Tanks.—There are four of these grouped together in one nest on the bench below the stills and towers. They are built of brickwork on a concrete foundation, and are faced inside with neat cement with a mixture of tar and pitch. The domes are of concrete, and each is fitted with a manhole and valve-opening gear, Fig. 3. The outlets are at the bottom, and the wooden valve-rods pass through the domes to the floor, where the valve-seat is formed. Each rod ends in a wooden block, faced with sheet india-rubber, and is pressed on the seat by the hand wheel and screw at the top. Each tank is fitted with a gauge-glass for measuring the solution put on the vats, to which it gravitates through a 6-in. earthenware main. The four storage-tanks for the gold-liquor being drawn from the vats are arranged exactly like the solution tanks, and their outlets lead to the charcoal filters on the next bench.

The Vats.—These are constructed of concrete, gauged 6 to 1; they are arranged in pairs, a center wall forming the sides of two contiguous vats. The walls are 2 ft. thick and the floors 18 in. thick. In internal dimensions, each vat is 60 ft. long, 12 ft. 6 in. wide and of a depth between 5 ft. at the top end and 5 ft. 3 in. at the lower end, giving a fall toward the outlet end of 3 in. in the total length. The walls are constructed first, and when these are stripped the floors are put in; before the work has set too hard all the internal faces are roughly chipped to give a good holding surface for the plastering. This is put on in two thicknesses; the first consists of ½ in. of 2 to 1 grout, and the second of a rendering of neat cement worked to a smooth finish. After about 2 weeks' gradual drying, all the internal surfaces are given a thick coat of a mixture of coal-tar and pitch, well boiled and put on hot.

The filter-bottom consists of 3 in. by 2 in. hardwood bearers spaced 2 ft. apart, running with the length of the vat, over which are laid transversely 9 in. by 2 in. hardwood planks; these are fitted loosely, and have a number of ½-in. auger holes bored in them as passages for the liquor. The packing consists of a thin layer of each of the following sizes of gravel: 2-in., 1-in., ¾-in., ½-in. and ¼-in., and on top of this about 9 in. of sand passed through a ⅛-in. sieve, and well washed to free it from dirt and charcoal. The whole of this packing is about 1 ft. 4 in. deep, Fig. 4. The solution main passes along between the two lines of vats, and branches lead to each vat separately, each branch being fitted with a short length of india-rubber piping and a screw clip. The gold-liquor main, which is connected to the vacuum pumps, is fitted with a screw-

*Abstract of paper read before the Institution of Civil Engineers in London.



MINES BUILDING, PAN-AMERICAN EXPOSITION AT BUFFALO.

valve and a branch pipe opposite each vat, and by regulating these valves the vats can be put on or off the vacuum at will, Fig. 4.

All these gold-liquor pipes, and the pumps, etc., are of cast lead with a small percentage of antimony for hardening. A small test-pipe, fitted with a piece of hose and a clip, is arranged in the branch pipe leading to each vat, so that, the main valve being closed, a sample of the liquor coming from the vat can be obtained for testing purposes. The test-pipes from four vats are arranged at one point so that the testing of the whole of one section can be done there. Lengths of 10 by 6 in. timber are let into the concrete on the tops of the side walls of the vats, and these act as longitudinal sleepers for the truck rails. The method of filling and emptying the vats at present is by means of trucks and hand labor, but it is intended ultimately to employ some form of steam dredge. A timber frame running on the rails, which are laid 14 ft. 6 in. apart, from center to center, carries four wooden trucks, which are filled from the vat, and then the whole carriage is run out to the tip. By this method 6 men can empty the 100 tons of heavy wet ore in a shift of 8 hours. The vacuum pumps are of a vertical type, with external outlet and inlet-valves; the plungers are 10 in. in diameter, and the stroke is 16 in.; they draw the gold-liquor from the vats and discharge it into a small well, from which the force pumps lift it to the storage-tanks, on the same bench as the solution tanks. The force pumps are fitted with hardwood plungers 9 in. in diameter, with a stroke of 16 in.

The Filters.—These are arranged in four sets, each set being connected to the main from the storage-tanks. The gold-liquor, in entering the first filter of a set, passes down through the charcoal, rises in a pipe leading from the bottom, and flows in at the top of No. 2 filter; here it passes through the second bed of charcoal, and rises as before to flow into No. 3 filter, Fig. 5. From No. 3 the waste liquor is either used as a wash-water on the vats, or is run on to the tip to clear away the tailings. The pipe connections and valves are so arranged that any filter may be thrown out of use for emptying and repacking purposes. The filters are built of brickwork on a concrete foundation, and are finished inside with cement plastering and tarring as in the vats. They measure 10 ft. by 11 ft. inside and are 4 ft. 6 in. deep. The wooden filter-bottom is formed in the same manner as that of the vats, the timber used being somewhat lighter. In packing a filter, cheese-cloth is first laid over the planking, then finely crushed charcoal is put in to a depth of 2 ft., and is well ramped in especially round the walls; thick perforated sheets of lead are then placed on the top and the liquor is allowed to flow in. The charcoal from these filters, when sufficiently charged with gold, is burnt in a reverberatory furnace, and the resulting gold dust, combined with ash, impurities, etc., is smelted, with suitable fluxes, in a specially constructed furnace.

In the actual treatment of the ore the method of procedure is the following: The trucks are filled from the main hopper by means of iron shoots through the hopper wall, and are then run over the vat and tipped. No special care is necessary in filling the vats, and when the ore is within 3 in. of the top it is simply leveled, a little being raked to the walls to prevent the solution from making its way down there. The solution is then run on, and when the vat is full the valve connecting with the pump-main is opened, and the vacuum, about 5 lbs. per square inch, begins to draw the liquor through. As the level of the solution on the vat becomes lower, fresh solution is run on, and this is continued until the vat is in a certain condition known as chlorinated, when water is put on, and the vat is kept under vacuum, till, by testing from the pipe below, the wash water shows no precipitate of gold with a solution of ferrous sulphate. The surface water is then siphoned off, and a sample of the residue is taken, the vat being then ready for emptying.

During the first few hours in which a vat is under solution, the liquor from the test pipe is clear and free from any smell of chlorine gas; later it gets very hot, showing that chemical action is going on in the vat; then, after about 15 hours, a slight precipitate of gold is given with ferrous sulphate, while toward the end of the treatment the liquor gives a good black precipitate, and smells strongly of free chlorine. If necessary, the amount of free chlorine can be ascertained by titrating with indigo solution. The vat at this stage is chlorinated and is ready for watering. During the time the vat is under water the liquor is occasionally tested to see how the washing is proceeding, and to determine when all the gold is washed out; the vat is then pronounced clean. A chlorination board shows the exact condition of each vat. It is the duty of the head tester to try all the vats the last thing before the end of his shift, and to alter the board accordingly. The head tester on the next shift can see at a glance which vats require attention.

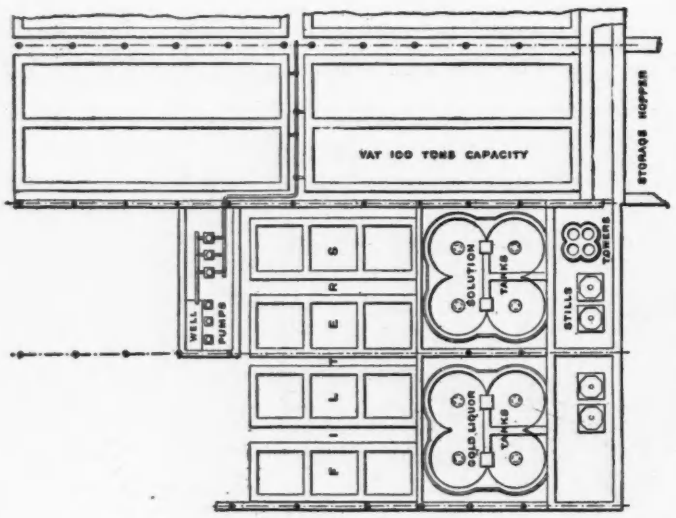
The cost per ton of treatment at these works over a series of months is given below, in cents:

	Operating.	Repairs.	Total.
Vats	44.28	3.46	47.74
Stills	46.88	1.72	48.60
Filters	3.16	0.08	3.24
Pumps	2.28	2.62	4.90
Electric light	....	....	0.76
Total, per ton	96.60	7.88	105.24

The treatment of the heavy sulphide ores, mined from the deeper levels, is confined to the Top Works. This ore is a hard and compact bluish quartz, heavily charged with iron pyrites, and weighs about 140 lbs. per cubic foot. The gold value varies greatly, running up to extremely rich ore, but the average sent to the works is about 4 oz. per ton. The sulphur in the raw ore averages about 11 per cent., which, after roasting, is reduced to about 0.15 per cent. The treatment is carried out exactly as described for the West Works, but as the ore is richer and the gold somewhat coarser, a larger quantity of solution is required, and the time under solution is correspondingly increased; the total time of treatment is, however, about the same, as the ore is much more porous, and the washing can be completed in a few hours.

A new plant, to treat 2,000 tons of low-grade sulphide ore per month, has been completed. It is built on the same lines as the West Works plant, with the exception of the roasting furnaces.

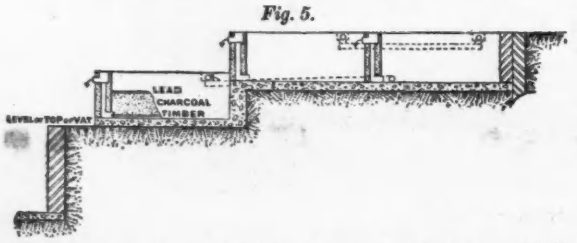
Fig. 1.



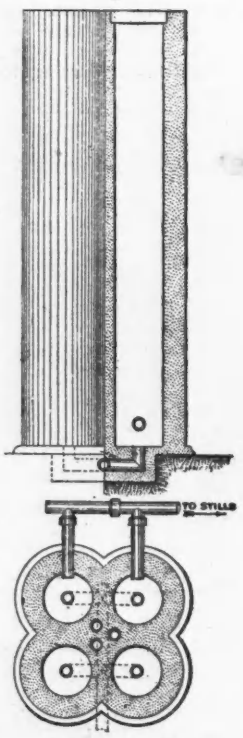
Scale, 1 inch = 40 feet.

GENERAL ARRANGEMENT OF CHLORINATION PLANT.

Fig. 5.



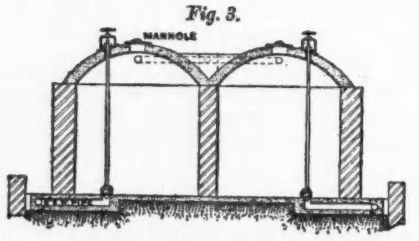
Figs. 2.



Scale, ¾ inch = 1 foot.

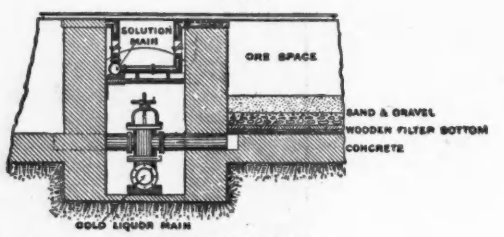
SECTIONAL PLAN AND ELEVATION OF TOWERS.

Fig. 3.



Scale, $\frac{3}{16}$ inch = 1 foot.

Fig. 4.



Scale, ¾ inch = 1 foot.

SECTIONAL ELEVATION OF VAT.

CHLORINATION PLANT AT MOUNT MORGAN, QUEENSLAND.

IRON WORKS IN INDIO-CHINA.—According to the "Echo des Mines" a French company has been formed for putting up iron works in the protectorate of Tonkin, near extensive iron ore deposits of remarkable quality.

M'CLOUD RIVER THREE-PHASE TRANSMISSION.—The McCloud River Electrical Power Company recently closed a contract with the Bullock Electric Company for all the electrical apparatus for a 35-mile transmission, from the hydraulic generating station on the McCloud River to Keswick, Cal. Redding and the Bully Hill Mining District will also be reached by the lines. There will be four 500 Kw. units, each consisting of a Bullock three-phase, 60-cycle alternator of revolving-field type, and a set of Stilwell-Bierce & Smith-Vaile twin turbine wheels. There will be six sets of these wheels, four being direct-connected to generators and one to each of the two exciters. Current will be transmitted at 32,000 volts e.m.f. Bullock transformers, having a capacity of 2,650 kilowatts, will be used for stepping-up and 2,500-Kw. capacity will be required in stepping-down.

THE QUEEN METER-SPARK INDUCTION COILS.

The general appearance of the finished instrument is shown by the illustration. It consists of two parts, the large section representing the primary and secondary, and the smaller cabinet at the side, containing the switches, the improved break and condenser. The induction coil is used for a wide variety of purposes, but during the past two or three years its importance has been greatly increased and its use considerably extended from the valuable effects it produces when used in connection with X-ray work and wireless telegraphy experiments. The coil itself is merely an instrument to convert a low-voltage current into one of very high voltage. The length of sparks depends upon the number of turns of wire on the secondary, and upon this also depends the voltage. By the use of this instrument a current such as is given by a storage battery can be transformed to such a high potential that sparks can be produced which will jump through several inches of air space. Owing to the great difficulty in properly insulating the wire in coils of long-spark lengths, their successful construction becomes very difficult and the cost high. Coils have heretofore been considered large which would give a free spark through an air space of from 12 to 15 in. This length of spark has heretofore been used for the best work in connection with X-ray work and wireless telegraphy. It has been demonstrated, however, that upon the nature and length of the spark depends to a considerable extent the distances to which messages can be transmitted without wires.

A prominent foreign government desiring to make extended experiments with the highest-class apparatus obtainable, selected the firm of Queen & Company, Incorporated, of Philadelphia, to construct for them two large induction coils which would give a spark length of 1 meter or approximately 40 in. Queen & Company have heretofore made a specialty of coils giving 15-in., 18-in. and 25-in. sparks, but have never before attempted the construction of a coil with a spark length exceeding 25 in. After considerable experimental work in order to determine the best form of construction and method of winding, the instrument shown in the illustration given herewith was designed.

Both parts of the instrument are mounted on castors so that it can be conveniently moved from place to place. The secondary of each contains about 100 miles of very fine insulated copper wire wound in a great number of very small sections. The secondary, as will be seen from the illustration, is divided in the center, making two separate and distinct parts. The primary contains considerable copper wire and over 200 lbs. of iron.

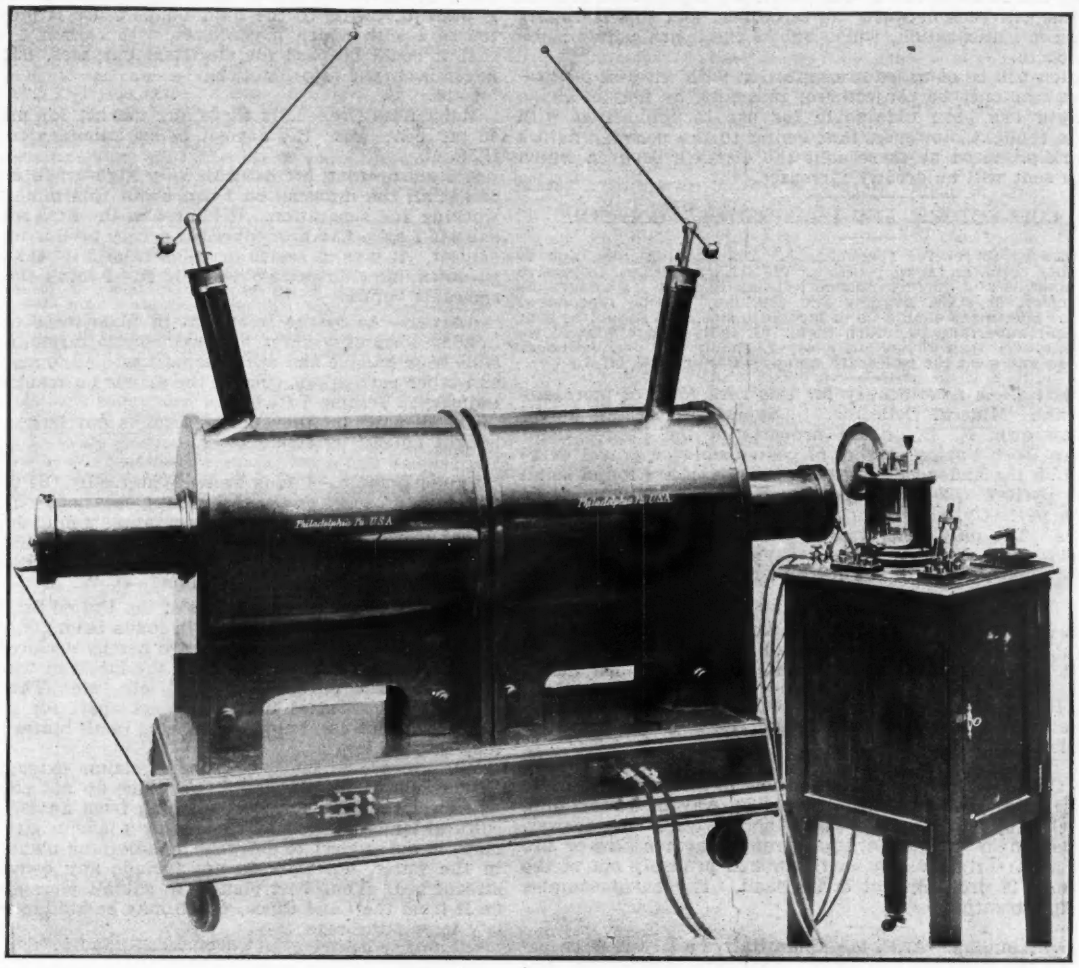


FIG. 1.—QUEEN METER SPARK INDUCTION COIL.

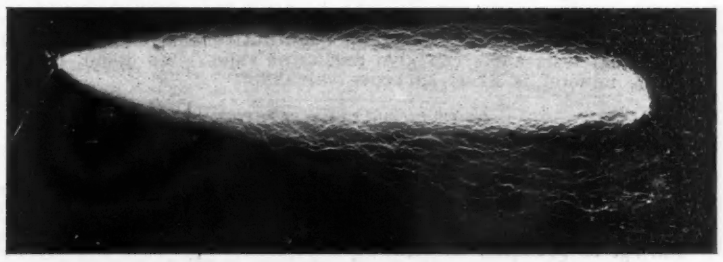


FIG. 2.—SPARKS FROM INDUCTION COILS.

In order to properly utilize the current which was necessary to operate these coils, a new form of break was devised, which possesses many desirable features, and which gives far better results than any heretofore secured. The speed at which this break operates can be made anything between one and several thousand per second. Inasmuch as at each break there is a spark induced in the secondary of the coil, it is evident that the speed at which the break runs determines the number of sparks produced by the secondary of the coil.

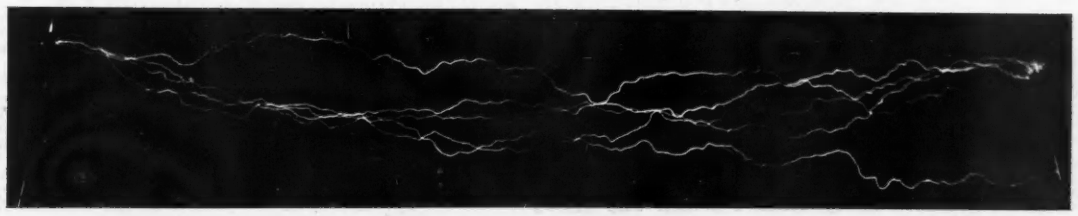


FIG 3.—SPARKS FROM INDUCTION COILS.

When used in connection with a storage battery giving 25 volts and 20 amperes, a very heavy secondary spark, representing hundreds of thousands of volts, is produced between the terminals when they are separated 42 in. This will be clearly seen in the accompanying illustration. When used to give smaller spark lengths of between 25 and 35 in., and when the break is run at comparatively high speed, a great number of sparks will pass between the terminals, and this is clearly shown in the second illustration, which shows the spark points separated at about 32 in.

The result which will be obtained in connection with wireless telegraphy experiments can only be conjectured, inasmuch as heretofore no such spark length has been obtainable for use in connection with this work. It is thought, however, that owing to the peculiar nature of the long spark produced by these coils the distance between which messages can be sent will be greatly increased.

MINERAL COLLECTORS' AND PROSPECTORS' COLUMN.

(We shall be pleased to receive specimens of ores and minerals, and to describe and classify them, as far as possible. We shall be pleased to receive descriptions of minerals and correspondence relating to them. Photographs of unusual specimens, crystals, nuggets and the like, will be reproduced whenever possible. Specimens should be of moderate size, and should be sent prepaid. We cannot undertake to return them. If analyses are wanted we will turn specimens over to a competent assayer, should our correspondent instruct us to do so and send the necessary money.—Editor E. & M. J.)

269.—Spear Pyrites.—A new locality for this rare form of marcasite is described in the "Mineral Collector." The mineral occurs in the pits near Bonhamtown, N. J., on the property of the Pardee Company, on the Van Horn Farm. A slab of coarse sand or gravel overlies the clay and on the under side, next the white clay, are found small groups of spear pyrites. The crystals are small, but many of them showed the form perfectly, and there can be no doubt about their being spear pyrites. The only other known locality for this crystalline form of marcasite is at Edgar's Pits at Sayreville, N. J. The new locality is on the opposite side of the Raritan River and about 4 miles distant.

270.—Clay.—F. E. F.—The box contains a very fine and plastic clay. It is not true fuller's earth, neither is it kaolin. Its value for pottery making can be determined only by experiment.

271.—Mexican Rocks.—G. H.—No. 1, the greenish rock is porphyrite. The white crystals are an orthoclase feldspar. No. 2, the red rock, is probably a sandstone.

272.—Virginia Clays.—C. C. C.—It is impossible to give a very definite opinion of the samples you send, for there is no way of determining the value of a clay by examination. Only actual tests will answer. No. 1 may be adapted for making ordinary rough earthenware or fire brick. No. 2 is, apparently, Fuller's earth, though probably not of the best quality. No. 3 is probably not a fire sand. The burnt samples are of pleasing appearance.

273.—Silicates of Alumina.—A. P. M.—Quantitative analysis is necessary to determine the samples you send. They are, apparently, hydrous silicates of alumina, yet are hardly to be classified as clay.

274.—Graphite.—J. B. C.—Your specimens show a mixture of quartz and feldspar containing scattered grains and masses of crystalline graphite. The graphite does not occur in sufficient quantity to make the deposit of value.

275.—Bitumen.—W. H. R.—The hydro-carbon compound you send may be of commercial importance; but little can be told of its economic value by examination. A careful quantitative analysis supplemented by actual tests alone can give results of value. We doubt, however, if the mineral is likely to prove valuable.

QUESTIONS AND ANSWERS.

(Queries should relate to matters within our special province, such as mining, metallurgy, chemistry, geology, etc.; preference will be given to topics which seem to be of interest to others besides the inquirer. We cannot give professional advice, which should be obtained from a consulting expert. Nor can we give advice about mining companies or mining stock. Brief replies to questions will be welcomed from correspondents. While names will not be published, all inquirers must send their names and addresses. Preference will, of course, always be given to questions submitted by subscribers.—Editor E. & M. J.)

Hooper Concentrator.—Would you kindly advise me through the columns of your valuable journal in regard to the efficiency of the Hooper concentrator, and if it will do all that is claimed for it by its manufacturers?—T. J. L.

Answer.—We cannot undertake to recommend or guarantee any particular machine or device. As a rule, patentees and manufacturers are apt to make very wide claims. If personal investigation is not possible, dependence must be placed on the advice of competent engineers. The reputation and responsibility of makers of machines must also be taken into account.

Assaying Gold and Silver Ores.—I would like to know the most simple way of assaying gold and silver ores?—G. C.

Answer.—We publish this because it is a sample of questions we are constantly receiving. One answer must serve for all. It is quite impossible for us to give any directions by which a person who knows nothing of the work and has had no experience can proceed to make assays of ore. The assayer must learn his business theoretically and practically, and no one can expect to take a few book directions and then go to work successfully. One might as well try to make chemical compounds, practice law or build a house without any previous experience.

Glucinum.—What is the metal glucinum used for? Has the metal or its ore any commercial value? Would it be likely to be of importance if produced in large quantities?—S. E. M.

Answer.—Glucinum has at present no special use. Some alloys with copper and other metals have been made, but only in an experimental way. It cannot be said to have any commercial value. Its preparation is difficult, owing to the high temperature required, its volatility and the ease with which it combines with carbon. It has been suggested that it could be used for electrical purposes, but this suggestion has never been put into practice.

Manganese Ore.—1. Is there any market for manganese ore carrying 40 per cent. Mn.; the deposit being tributary to the Pacific Coast?—H. G. B.

2. I am opening a deposit of very high-grade manganese, and I want to get all the information I can about this mineral, its uses, means of working and separation. It is here in the lime rock formation, and two experts I have had pronounced it a very promising and apparently large deposit. It lays in seams or veins from 2 in. thick, which widen as we go down; now down only 10 or 12 ft. I think the lime rock holds considerable values.—J. W. P.

Answer.—As to the treatment of manganese ore, it consists usually in some form of washing or rough concentration, to free it as far as possible from gangue and other impurities. As to uses, consumption, prices and other particulars, consult the article on manganese in "The Mineral Industry," Volume VIII.

The demand on the Pacific Coast is not large, manganese ore being bought chiefly by steelmakers.

Public Domain.—Lands Under Water.—By the mining laws we are allowed to prospect and make mining locations on the "public domain." Will you kindly state what constitutes "public domain"? If I found a mineral quartz vein which crossed a lake, would this lake constitute public domain? Do the United States mining laws apply to all public domain in all States in the Union?—O. W. A.

Answer.—The revised statutes of the United States, Section 2,319, say: "All valuable mineral deposits in lands belonging to the United States, both surveyed and unsurveyed, are hereby declared to be free and open to exploration and purchase, and the lands in which they are found to occupation and purchase . . ." etc., etc. This applies to all lands owned by the United States, not set apart for specific purposes, such as Government use, public parks, etc., in all States and Territories where they may be located.

With regard to lands or mineral claims extending under water, the regulations of the General Land Office do not contain anything which will meet the case you put. Judging from analogy in the case of agricultural lands, the ground covered by a lake or stream meandered on the maps is not subject to entry. The adjoining owners have certain rights in the water, but they do not include any ownership of the lake or stream bed. Your best plan is to submit your claim and get a ruling on it from the Land Office, which may be able to find some provision of law to suit the case.

AN INDIAN COLLIERY.—"Indian Engineering" says that at the Dandot Colliery the coal is at present worked by level or inclined tunnels driven into the hillside. The low-level at the main mine is the furthest in, and has reached a distance of 2,200 ft. from the mouth. Coal has been worked during the official year ending March 31st, 1900, from the same mines as previously, main mine, out-crop mines, and Pidh mines. The Pidh mines give the best output of the three, but are rapidly being worked out, the area being a detached one. Explorations were carried out during the year in the surrounding hills, but so far no new workable area of coal has been proved. The slack or dust coal continues in great request. The average number of persons employed daily was 1,593. The total output was 81,219 tons. The year's working shows an increase of 6,629 tons in the total output, which was chiefly due to labor coming in more freely, owing to failure of crops.

PATENTS RELATING TO MINING AND METALLURGY.

UNITED STATES.

The following is a list of the patents relating to mining and metallurgy and kindred subjects, issued by the United States Patent Office. A copy of the specifications of any of these will be mailed by the Scientific Publishing Company upon receipt of 25 cents.

Week Ending January 1st, 1900.

664,891. HEAD FOR ACID-CONTAINING RETORTS. Neil Patterson, West Line, Pa. A head having an opening, an inwardly-projecting marginal flange at the inner side of the opening, an outer door hinged to the head and closing into the opening and against the flange, one or more packing-rings, and removable bolt-fastenings, said bolts having acid-protected heads located upon the inner side of the retort, and nuts upon the outer side.

664,892. CONVEYOR. Michel J. Paul, New York, N. Y. The combination with a floating base, of a sectional conveyor mounted on same, mechanism on the base for driving the conveyor, and mechanism on the base for protruding the conveyor-sections outward at opposite sides.

664,903. APPARATUS FOR DRYING FERTILIZERS. Jonas J. Seldner, Baltimore, Md., assignor of one-third to Leopold Strouse, same place. The combination with a rotatable cylinder, and rotatable beaters within the same, of an annular wall surrounding the cylinder near one end, a hopper communicating with the space between said wall and cylinder, a series of openings in the cylinder communicating with said space, and a series of inclined inwardly-projecting blades on the inner surface of the cylinder between said openings arranged to direct the material longitudinally of the cylinder.

664,942. AIR VALVE. Conrad George, Listowel, Canada, assignor of two-thirds to Josephus Snyder Meyers and John Arkell, same place. The combination with a valve-casing having an inner head provided with a recess or cup therein and an orifice leading outwardly therefrom, of a stem provided with a disk-shaped end, a rubber disk fitting within the recess and within which the said disk-shaped end of the stem is embedded at or near the outer or ex-

posed end thereof whereby the upper drawing of the stem compresses the inner side of the disk against the seat and at the same time expands the periphery of the disk circumferentially against the wall of the recess.

664,957. FIBROUS COMPOSITION OF MATTER AND METHOD OF MAKING SAME. George W. Laraway, New York, N. Y., assignor to the National Package Company. Glens Falls, N. Y. A hard and tough product consisting of fibrous matter, a fused cementing ingredient, lime and a waterproofing ingredient.

664,958. METHOD OF UTILIZING LIQUID AIR IN EXPLOSION MOTORS. Carl Linde, Munich, Germany. The method consists in intermittently gasifying liquid air, causing the gasified air to mix with fuel under the pressure resulting from its transition from the liquid to the gaseous state, firing the mixture of fuel and compressed air, and causing the products of combustion to act upon the piston.

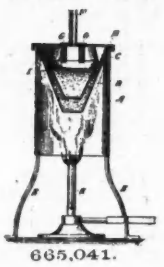
664,988. DROP-BOTTOM DUMP CAR. Edgar H. Wise, Johnstown, Pa., assignor of one-half to John W. Carter, same place. An improved dump-car of the class described, comprising the frame, the tiltable body members, and the drop-bottom in operative connection with the body members.

664,998. COMPOSITION FOR ELASTIC WASHERS. Ewald Goltstein, Cologne, Germany. A composition consisting of crude india-rubber, talc, asbestos and gutta-percha.

665,025. CAR-UNLOADING APPARATUS. Timothy Long, Cleveland, Ohio. The combination of a car-supporting cradle, a laterally-movable platform within said cradle on which the car may rest, and means for lifting said cradle and tipping it sidewise, and a longitudinal bar within the cradle on that side toward which the car is dumped, whereby the car may move over bodily into engagement with said bar when the cradle is tipped.

665,026. WELL-DRILLING MACHINERY. George D. Loomis, Tiffin, Ohio. A well-drilling machine comprising a frame including a derrick, a pulley for the derrick, a drill-rope passed over the pulley and adapted for operative connection with a spudding-beam pivoted in the frame, a second beam having a fixed relation to the spudding-beam, a rotatable body engaging the second beam and adapted to move longitudinally thereof to raise and lower it with varying speeds, and a pivoted walking-beam adapted for operative connection at one side of its pivot with the drill-rope and at the opposite side of its pivot with the second beam.

665,041. APPARATUS FOR DETERMINING ASH. George M. Tucker, Kingston, R. I. The combination with an aspirator for withdrawing volatile products of the crucible I, cover K, tube M, secured



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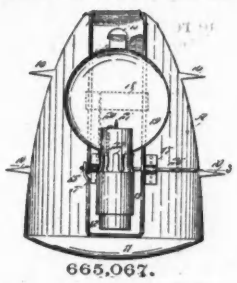


665,067.

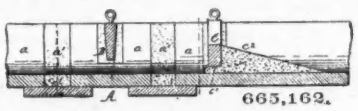
in said cover, and communicating with said aspirator, and means for preventing the drawing of the solid material within said crucible into said tube by the action of said aspirator.

665,061. HOISTING AND DUMPING BUCKET. Joseph Carson, New York, N. Y. The combination of a receptacle for transporting and discharging material, said receptacle consisting of two parts hinged at the bottom and adapted when closed to contain the material and when opened and inverted to discharge the same, a hoist-rope attached to said receptacle and means to invert said receptacle when suspended from the hoist-rope.

665,064. ELECTROLYTIC CELL. Edwin D. Chaplin, Winchester, and Henry G. Halloran, Boston, Mass. In combination, the containing-tank, the cathode, a pervious diaphragm adjacent to the cathode of texture to permit liquid flow, the anode, the chamber inclosing the anode, means for suspending said chamber within the general electrolyte-containing space of the tank, means to convey gas away from the said chamber, and the osmotic diaphragm of such texture as to prevent the flow of liquid therethrough at the mouth of said chamber, the said diaphragms separated from each other by a portion of the general electrolyte-containing space of the tank to prevent any intercurrent movement of the said electrolyte.

665,067. MINER'S CANDLESTICK. Charles H. Cornell and Felix J. Troughton, Victor, Colo. A candle-holder, a support therefor, a shield to which the support is removably attached, a locking device for the support for the candle-holder, said support having a loop-section, a tool which enters the loop-section of the support, and a device for temporarily locking the tool in the tubular section of the said support.

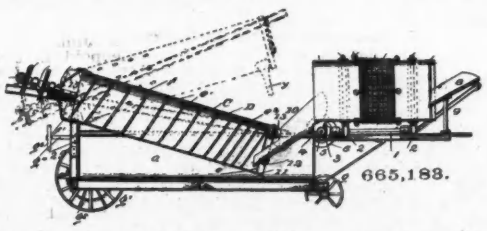
665,162. SKIMMING TROUGH FOR BLAST FURNACES. Frank E. Bachman, Buffalo, N. Y. A sectional skimming-trough composed of two or more metal sections and a friable section or sections of refrac-



665,162.

tory material interposed between the metal sections, and sealing plates or slabs arranged on the under side of the trough and extending across said friable sections.

665,183. MINING MACHINE. Francis J. Crane, Cripple Creek, Colo. The combination with a water-tank, of a cylinder having one end extended into said tank and provided with perforations above the



665,183.

water-line, a pivoted frame normally occupying an inclined position, said cylinder being rotatably mounted in said frame, means for rotating said cylinder, a screw within the latter extending from its lower to its upper end, and conveying means onto which said screw discharges as the cylinder is rotated.

665,105. PROCESS OF EXTRACTING GOLD AND SILVER FROM ORES. John C. Kessler, Milwaukee, Wis., assignor of three-fourths to Christian Wahl and William Priester, same place. The process consists, first, in subjecting the ores to the action of a solution consisting of water, yellow prussiate of potassium, cyanide of potassium, and permanganate of potassium, until the gold and silver contained in such ores are dissolved; second, in separating the metals from their solution by the application of a soluble lead salt, by which the cyanide of alkali metal contained in solution is decomposed and a non-soluble cyanide of lead is formed, which is precipitated together with the cyanide of gold and cyanide of silver.

665,185. ROCK-DRILL SHARPENER. Ralph M. Crockett and Harvey J. Bundy, Moscow, Idaho. A rock-drill sharpener comprising an elongated stock provided at one end with an annular die-face, and with a central socket or bore opening through the said face, and a centering-stem fitted at one end in the socket or bore of the stock and held rigid therewith, said stem extending beyond the die-face, and being removable and replaceable.

665,222. AIR-COMPRESSING MACHINE. John J. Isler, Gladstone, Mich. Mechanism comprising a suitable base, a plurality of compressing-cylinders detachably mounted upon the base, each cylinder having a piston whose rod extends through the cylinder-heads in opposite directions, said cylinder having its heads provided with alternately-operating puppet-valves for governing the inlet and exhaust ports, the piston-rods in the end cylinders each having a cross-head upon the outer extremity, lever mechanism connected with the cross-heads for imparting a reciprocating movement thereto, and slide-boxes for the cross-heads adjustably mounted on the base.

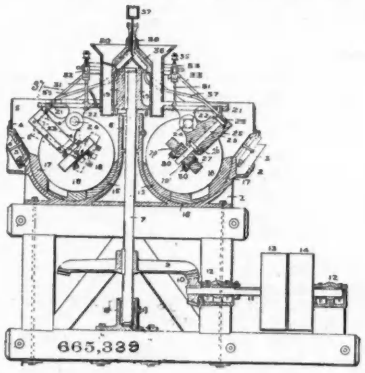
665,227. CONVEYOR. Joseph G. Johnston, Detroit, Mich., assignor to the American Car and Foundry Company, St. Louis, Mo. The combination with a stationary frame, of a rectilinear reciprocatory frame arranged in juxtaposition thereto, and a lifting-frame which is actuated by, and caused to reciprocate at an angle to, the movement of said rectilinear reciprocatory frame.

665,254. LINING FOR CRUCIBLES. William A. McAdams, New York, N. Y. A crucible-lining composed of the powdered fused oxide of manganese and the oxide of copper as a binder.

665,262. SCREW CONVEYOR. Staunton B. Peck, Chicago, Ill., assignor to the Link-Belt Machinery Company, same place. The combination of a containing-box normally in a horizontal position for the conveyance of gritty substances, a shaft in said containing-box, a screw-blade upon and about said shaft, a longitudinally-split cylindrical-like enlargement removably, but normally rigidly, attached to and surrounding the shaft so as to rotate therewith, a longitudinally-split tube-like bearing part into which said cylindrical part fits, a support removably attached to the top of said containing-box and connected with the tube-like bearing part so as to hold the same in position, the outer face of the cylindrical part snugly fitting the inner face of the tubular part substantially throughout their lengths, so as to present extended bearing-surfaces and to prevent the gritty material in which the bearing is embedded from entering between these parts.

665,266. PROCESS OF MANUFACTURING GAS. Frederick Purdy, Chicago, Ill. In the process of manufacturing gas, the passing of the products of combustion, mingled with steam, air and hydrocarbon oil while in a highly-heated state, into an electric field and therewith completing an electric circuit.

665,339. ORE GRANULATOR AND PULVERIZER. John M. Montgomery, Butte, Mont., assignor of one-half to John T. Baldwin, Edward W. Clark and S. Robert Fair, same place, and Edwin M. Clark, West Superior, Wis. The combination with an annular casing, of a ro-



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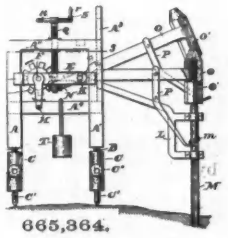

665,364.

tatable head provided with lugs, diagonally-disposed bearing-boxes adjustably secured to said lugs, pusher-wheels journaled in said boxes, and spheres located in said casing and adapted to be engaged by the pusher-wheels and by them chased around the casing.

665,364. HAND-DRILLING MACHINE FOR DRILLING STONE. Carl M. Engstrom, Ossipee, N. H. The combination with a frame of guide-plates adjustable thereon, a series of hammer-helves pivotally arranged thereon, a series of toothed wheels for operating said hammer-helves, a series of drills mounted in drill-guides on said plates, each drill having a spiral projection and arms pivoted on the hammer-helves, the lower ends of said arms being adapted to engage said spiral projections and partly rotate the drills.

GREAT BRITAIN.

The following is a list of patents published by the British Patent Office on subjects connected with mining and metallurgy.

Week Ending December 8th, 1900.

22,825 of 1899. BRIQUETTE MAKING. M. Waissbein, St. Petersburg, Russia. Method of using small coking coal for cementing materials into briquettes.

873 of 1900. ALUMINUM ALLOY. L. G. Baudelot, Paris, France. An addition of cobalt to aluminum or aluminum bronze to increase the hardness.

874 of 1900. ALUMINUM CASTING. L. G. Baudelot, Paris, France. Making aluminum articles with iron cores to increase their strength.

985 of 1900. ZINC-LEAD ORE TREATMENT. G. de Bechi, Paris, France. The addition of silicious matter to zinc-lead ores before roasting, the effect being to leave less insoluble zinc after leaching.

1,748 of 1900. ROCK DRILL. Z. W. Daw, London. In rock drills, arrangements to prevent the piston from knocking the rear end of the cylinder on the back stroke.

14,124 of 1900. SILICIDES OF ALKALINE METALS. International Chemical Company, New York. The production of silicides of alkaline earth metals by heating a salt with silica and carbon in electric furnace.

17,460 of 1900. PEROXIDE OF LIME MAKING. G. F. Jaubert, Paris, France. Method of manufacturing peroxide of lime and its hydrate.

PERSONAL.

Mr. A. B. Richmond, chief engineer of Las Prietas mines in Sonora, Mexico, has resigned and will go to Socorro, N. M.

Mr. B. H. Tatem has succeeded Mr. E. D. Braden as assayer in charge of the United States Assay Office at Helena, Mont.

Mr. L. A. Phillips, of Pittsburg, Pa., is the new superintendent of the Trade Dollar power plant at Swan Falls, Idaho, vice Mr. W. White.

Mr. W. C. Knight has been elected president and Mr. A. C. Lawson secretary, of the Cordilleran section of the Geological Society of America.

Mr. S. Fisher Fuller, formerly with Milliken Brothers, is to have charge of the New York City contracting office of the American Bridge Company.

Mr. L. W. Tatum, of Chicago, is going to Southern Illinois to examine a 4,000-acre tract of coal land and advise on shaft sinking and machinery.

Mr. T. J. Hyman has been elected treasurer of the Illinois Steel Company to succeed Mr. Wm. H. Thompson, resigned. Mr. Hyman is now both secretary and treasurer.

Mr. F. H. Kohlbreaker has retired as superintendent of the Mineral Railroad and Transportation Company, one of the coal mining concerns controlled by the Pensylvania Railroad.

Mr. Isidor Davidov, now superintendent of the Santa Barbara Mines in Colombia, after a visit to the United States for the past two months, sails on January 26th for South America.

Mr. E. F. Bradt, who had charge of the Manila Iron Company's explorations in Michigan last year, is to take charge of the American Steel and Wire Company's explorations on the Atikokan Range in Canada.

Mr. James Bowron, vice-president and treasurer of the Tennessee Coal, Iron and Railroad Company, has been elected chairman of the executive board of the Birmingham Savings and Trust Company, of Birmingham, Ala.

Col. N. W. Sample, of Denver, Colo., formerly general superintendent of the Denver & Rio Grande Railway system, has accepted the position of superintendent of machinery at the Baldwin Locomotive Works in Philadelphia.

Mr. J. T. Milliken, who for some time has been superintendent of the Arequa Mill of the Colorado Reduction Company of Cripple Creek, Colo., has gone to Florence to take a similar position in the mill of the Union Extraction Company.

Mr. J. S. McAuliffe, who has been chemist at the Oxford Furnace, Hackettstown, N. J., since the Empire Steel and Iron Company purchased the plant, has resigned to accept a similar position with the Musconetcong Iron Works at Stanhope, N. J.

Mr. William Ramsey, formerly of Mt. Pleasant, Pa., has resigned the superintendency of the Gorman Coal and Coke Company's Tunnelton, W. Va., plants and gone to St. Louis, Mo., where he is now connected with the Kansas & Texas Coal Company.

Mr. Leo. Bullion, who has been superintendent of the Brownfield Works of the H. C. Frick Coke Company, has resigned to accept a position in the offices of the Carnegie Steel Company, at Pittsburg. His successor at the Brownfield Works is Mr. S. Simpson.

Profs. G. A. and W. C. Bailey have returned to San Francisco from Death Valley in Inyo County, Cal., where they have spent several months in the interests of Eastern scientists. Their attention was mainly given to locating the shore lines of the big sunken lake.

Mr. John C. Brain, of Mobile, Ala., who has for years been experimenting with blast-furnace slag, is in the Birmingham, Ala. District making arrangements to construct a big fertilizer factory. He proposes to use slag and a mixture of chemicals, and is said to have a good patent.

Mr. Walter Rachals, formerly assistant engineer at the Ohio works of the National Steel Company, at Youngstown, O., has been appointed chief designing engineer to succeed Mr. Marvin A. Meland, who resigned to become general manager of Wm. A. Tod & Company, Youngstown, O.

Mr. F. C. Gedge has been appointed superintendent of the Waukegan, Ill., works of the American Stele and Wire Company, succeeding Mr. H. E. Rice, who resigned to accept a similar position with the Washburn Wire Company. Mr. Gedge was formerly superintendent of the American Company's works at Anderson, Ind.

Mr. Hartwig A. Cohen, of Capt. De La Mar's properties, was to be in Salt Lake City January 14th. Mr. Cohen is reported to have been to Santiago, Cuba, conducting an examination of the old Peidras Verdes copper mine, incidentally dropping off at Boston to try to effect the listing of Consolidated Mercur on the Boston Stock Exchange.

Mr. E. W. Stearns has been appointed manager of the East Berlin, Conn., plant of the American Bridge Company. Mr. Frank S. Moore has been appointed manager of the Lafayette, Ind., plant. All the Pittsburg plants have been consolidated into one, and Mr. J. W. Walker appointed as manager. Mr. C. A. Billings, having been appointed assistant treasurer for the New York District, and Mr. H. W. Post has been appointed manager of the Post & McCord plant.

Mr. C. E. Sharpless, superintendent of the Berwind shaft at Du Bois, Pa., has closed a term of several years in that position and left to take charge of operations of the Berwind-White Company, at Windber, Pa. Mr. Sharpless went to Du Bois about 5 years ago from Phillipsburg. Mr. A. J. Cook, who has charge of the company's mines near Bellefonte, at Snowshoe, Horatio, Anita and Cataract, will hereafter have general supervision over the works at Du Bois, while Mr. C. P. Munch will be Mr. Cook's assistant superintendent.

OBITUARY.

Mr. Albert Adler, a member of the firm of Adler Brothers, Birmingham, Ala., while investigating some mineral lands in Walker County, on January 10th, fell from a bridge, receiving injuries which resulted in his death the following day. His funeral occurred Sunday, January 13th. The firm of Adler Brothers developed the big brown ore fields in the northeastern part of the State.

Joseph R. Walker, of Salt Lake City, Utah, and Walkerville, Mont., died at Salt Lake on January 6th. He had been in poor health several years. Mr. Walker was president of the Alice Mining Company, owning the Alice gold mine at Walkerville, and though most of his life was spent in Utah was one of the pioneer developers of the Butte district. It was he who, in 1876, sent Marcus Daly to Butte and bought the Alice Mine, the first mining sale of note in Butte. The Alice shaft was the first to reach 500 ft. and the first shaft to go down below water level. The great results achieved from it attracted general attention. In Utah, Mr. Walker was prominent in financial and mining circles, and left a fortune estimated at $2,000,000. He, with 3 brothers, went to Salt Lake 45 years ago and after a time opened a small store. They also engaged in buying gold dust from the placer miners and in the later 50s started a banking house. In the 70s he took up mining. He leaves a daughter and four sons.

SOCIETIES AND TECHNICAL SCHOOLS.

American Chemical Society—New York Section.—At the meeting held at the Chemists' Club on January 11th, Dr. T. O'Connor Sloane read a "Note on Spheroidal State Evaporation" with experiments, and Dr. Wm. McMurtrie made a report on the very successful mid-winter meeting of the society, held during the holiday week in Chicago, at which 139 members were in attendance.

The committee appointed to confer with the Bureau of Combustibles of the city of New York made a report of progress through its chairman, Dr. T. J. Parker, who stated that there were prospects of having the regulations in regard to storage of acids modified in accordance with the present needs of business interests.

Engineers' Club of Philadelphia.—At the meeting on January 5th 85 members and visitors were present. Messrs. Horatio A. Foster, John V. Rice, Jr., Chr. J. Steen, N. J. Witmer and Augustus Wood were elected to active membership, and Messrs. Alan Corson and W. Purves Taylor to junior membership.

Mr. Charles S. Gowen gave an informal lecture upon "The New Croton Dam, New York," illustrated with lantern reproductions of drawings and views of the work. He described in considerable detail the character of the location of the new dam, and the engineering features of most interest in its erection.

The subject was discussed by Messrs. L. Y. Schermerhorn, John Birkinbine, John W. Hill, George S. Webster and others.

Engineers' Club of St. Louis.—At the meeting on January 2d 22 members and 7 visitors were present.

The following were elected members: Wilbur Hayes Thompson and George Dyer Johnson.

As Prof. Emery S. Johnson, Professor of Commerce and Transportation, University of Pennsylvania, and member of the United States Isthmian Canal Commission, was present a departure from the announced subject of the evening was made, and Prof. Johnson was invited to speak on the work of the Isthmian Canal Commission. The speaker confined his remarks to the engineering problems only and presented in a brief but instructive and entertaining manner the results of the work of the commission in investigating the subjects of the construction of the Isthmian Canal by the United States Government. He began with a short historical review of previous investigations and attempts at a solution of the problem, and then explained that three routes had received the chief study of the commission:

(1) A possible route across the Isthmus of Darien.

(2) The route through the State of Panama, traversing Lake Bohio, recommended and adopted by the French, and

(3) The route through the States of Nicaragua and Costa Rica, traversing Lake Nicaragua and known as the Nicaragua Route.

From the purely engineering standpoint, the Darien Route seemed inferior to both others, owing to the fact that in order to construct a tide level canal a great tunnel would have to be constructed, and for a high level canal it did not lend itself as readily as the other routes. The commission considered a tunnel in a canal more objectionable than one or more locks.

Of the remaining 2 routes, the Panama seemed the more practicable as regards engineering features, but the undesirability of the concessions it was considered possible to secure, led the commission to recommend the Nicaragua Route.

The latter route will require the construction of a large masonry dam across the San Juan River, the construction of a harbor at each end of the canal, the building of a number of miles of artificial canal, and the improvement of existing waterways. The controlling factor in the time reqiured to construct the canal is the construction of the dam. It has been estimated this would require about 8 years time (possibly only 6) and that the entire canal could be finished in this time without unnecessary duplication of plant.

A discussion then followed, bringing out a number of interesting points. The discussion was participated in by Messrs. Pitzman, Bryan, Colby and Grimm.

The president, on behalf of the club, then thanked Prof. Johnson for his talk.

INDUSTRIAL NOTES.

The Viennot Advertising Agency has moved its New York office from 127 Duane street to room 719 in the Temple Court Building, Nassau street.

The M. C. Bullock Manufacturing Company, of Chicago, Ill., recently shipped a second diamond core drill to the Government of Nova Scotia, and has received an order for a second one from the Government of Chile.

H. D. Crippen, of Denver, Colo., is now the sole licensee and manufacturer of the Jackson hand-power rock drill. The drill is now sold with a guarantee against breakage by ordinary use for a period of 2 years from date of sale.

The Illinois Steel Company, of Chicago, Ill., has obtained a contract through Flint, Eddy & American Trading Company, of New York City, for furnishing 10,000 tons of 60-lb. rails, which are intended for the Imperial Government Railways of Japan.

The St. Louis Well Machine and Tool Company, of St. Louis, Mo., is adding to and improving its line of well-drilling machinery and expects to meet all demands from the mining industries. The company will soon have an improved core drill on the market.

The Robert Aitchison Perforated Metal Company, of Chicago, reports that it is busy on orders for perforated metals for use in fanning mills, ice machines, clay screens, besides small orders for repair work. The new year is starting out with every evidence of continued prosperity.

Messrs. Munn & Copeland, of New York City, have just closed a contract for prospecting a gypsum deposit near Saltville, Va., by the Davis Calyx core drill. The contract calls for 10,000 ft. of drilling. This firm has also just finished testing by the core drill for the new Y bridge at Zanesville, O., for the American Bridge Company, of New York City.

The American Bridge Company has grouped all its Eastern plants in one section, and appointed Mr. A. J. Major, formerly manager of the bridge and construction department of the A. & P. Roberts Company, as manager. These plants include the Pencoyd, the East Berlin, the Buffalo, the Edge Moor, the Elmira, the Groton, the Hilton, the Horseheads, the Trenton, the Post & McCord, the Rochester and the Union.

The Post Commissioners of Calcutta, who recently placed orders for American locomotives, have made a statement, giving the reason. The lowest English tender quoted was equivalent to $7,720 for each locomotive, and 9 months required for delivery. The lowest American tender quoted was $6,300 each, and 6 months required to complete and deliver the locomotives. The latter was accepted subject to approval by the Government.

The American Car and Foundry Company, of New York City, has secured a contract from the Flint, Eddy & American Trading Company for the shipment of 300 freight cars intended for the Chilian Government Railroads. An order for 100 cars has also been received through W. R. Grace & Company for the same road. Sixty-three passenger coaches have just been shipped for the New Zealand Government Railways. The contracts are said to exceed $500,000 in value.

The Berlin Construction Company, with a capital of $100,000, has been formed under New Jersey law to design and erect all classes of steel buildings, bridges and structural work, and will also make a specialty of steel concrete construction. Offices have been opened in the St. Paul Building, New York, and at Berlin, Conn. D. E. Bradley is president; Geo. H. Sage, vice-president, and Seymour N. Robinson, treasurer. These gentlemen were all connected with the management, as directors, of the Berlin Iron Bridge Company, and recently resigned responsible positions with the American Bridge Company in order to organize the new company.

The Buffalo Forge Company, of Buffalo, N. Y., during the first week of the new century called together its entire staff of travelling men. The gathering afforded opportunity of closer contact between various officials of the company, travelling representatives and the heads of departments, some of whom never met before. The various engineering problems encountered in planning and installing heating and blast plants of various sorts were discussed. D. W. Roper, who for the past year has been travelling in England and Europe in the interest of the company, returned in season to attend the meeting at Buffalo and was able to give much information of interest concerning trade conditions across the Atlantic. Entertainment was provided by the firm. One evening the party occupied 4 boxes at a leading Buffalo theater. On the following evening there was a banquet at the Iroquois Hotel, at which H. W. Kreinheder, of Buffalo, was the guest of honor and toastmaster.

TRADE CATALOGUES.

The Hazard Manufacturing Company, of Wilkes-Barre, Pa., issues a neat 76-page illustrated pamphlet of handy size in addition to price-lists containing interesting information about breaking strains, internal lubrication, wire rope haulage and splicing wire rope.

Siemens & Halske, of Berlin, Germany, issue a large illustrated pamphlet describing many of their exhibits of electrical machinery and devices at the Paris exposition. The firm's exhibit included telegraphic apparatus, telephones, stock market registers, fire alarms, meters, etc.

"The Great Factor in Progress and Modern Enterprise," a short talk on preventing boiler scale, is a little pamphlet issued by the J. H. Parsons Chemical Company, of Chicago, Ill. The pamphlet contains information about scale and gives testimonials from users of "A. B. C." boiler compounds.

The Colorado Iron Works, of Denver, Colo., maker of ore milling and smelting quipments, has published an illustrated 56-page pamphlet entitled "Some Details as to Ore Crushing and Ore Crushing Machinery." This pamphlet is not a price list, but describes Blake, Dodge and Bosworth breakers, gyratory crushers, crushing rolls of various patterns, ore sample grinders for laboratory use, elevators, screens, hydraulic classifiers and the Bartlett concentrating table.

MACHINERY AND SUPPLIES WANTED.

If any one wanting machinery or supplies of any kind will notify the "Engineering and Mining Journal" what he needs he will be put in communication with the best manufacturers of the same.

We also offer our services to foreign correspondents who desire to purchase American goods of any kind, and shall be pleased to furnish them information, catalogues, etc.

All these services are rendered gratuitously in the interest of our subscribers and advertisers; the proprietors of the "Engineering and Mining Journal" are not brokers or exporters, and have no pecuniary interest in buying and selling goods of any kind.

GENERAL MINING NEWS.

Oil Exports.—In the year 1900 the exports of mineral oils from the United States were as follows: Crude, 137,501,160 gals. (117,683,967 gals. in 1899); naphthas, 18,262,744 gals. (17,904,015 gals. in 1899); illuminating, 730,585,487 gals. (724,562,993 gals. in 1899); lubricating and paraffin, 68,997,715 gals. (69,329,188 gals. in 1899); residuum, 19,776,370 gals. (21,544,278 gals. in 1899); total, 975,123,476 gals. (951,024,441 gals. in 1899); an increase this year of 24,099,035 gals., or 2½%, chiefly in crude oil exports.

ALABAMA.

Alabama Improvement Company.—At a meeting of the stockholders of this company, held at the offices of the company at 253 Broadway, New York, on January 16th, the following board of directors was elected to act during the ensuing year: R. P. Rothwell, Carl H. Fowler, F. J. Pratt, C. H. Philips and C. C. Schnatterbeck. The board of directors elected the following officers: President, R. P. Rothwell; vice-president, Carl H. Fowler; secretary-treasurer, F. P. Pratt. The offices of the company are at 253 Broadway.

Bibb County.

Galloway Coal Company.—This company has, through purchase and lease, secured 2,000 acres of coal lands between Ardella and Gurney, on what it known as Daly's Creek. Two seams of coal will be worked, and it is intended to put in a slope and 2 drifts.

ALASKA.

Douglas Island.

(From Our Special Correspondent.)

Yakima.—Work on this group, about 1½ miles from tide-water back of the Mexican Mine on Douglas Island, has gone steadily forward. A great deal of work has been done and the results are said to be so unusually satisfactory that a mill will be needed in the Spring.

ARIZONA.

Graham County.

Arizona Copper Company.—This company informs us that the production of its mines at Clifton for the month of December was 923 short tons (1,846,000 lbs.) of copper.

Yavapai County.

Several mines and smelters have been affected by the coal miners' strike in the southern Colorado fields and in New Mexico, and some have closed down temporarily.

CALIFORNIA.

Amador County.

(From Our Special Correspondent.)

Balliol.—A large force of men is at work at this mine east of Sutter Creek. The tramway and chute are completed and mining is again going on in the open cut. The mill is running. The South Park Tunnel is in 235 ft. and 2 crosscuts have been made, the first one at the face is in 20 ft. of ore, and the second at 190 ft. is still in ore at 12 ft. W. M. Storms is superintendent.

Fleming.—This property at Jackson, adjoining the Zeile Mine, was bonded to B. A. Ogden, who organized the Consolidated Jackson Mining Company, with a capital stock of $300,000, directors being M. Goldberg, president; O. Rich, vice-president; A. J. Rosborough, secretary; E. A. Levy, W. Geist and W. K. Slack. The surface indications are said to be favorable.

Zumalt.—At this mine, ½ mile east from Pioneer, 2 men are reported to have taken out 80 tons of ore during December which milled $8,000 at the James Mill at Antelope.

Calaveras County.

(From Our Special Correspondent.)

Elva.—At this asbestos mine near Copperopolis, owned by C. Rasberry, there is said to be a large body of long-fiber asbestos developed, and that arrangements are being made to work with a large force of men.

Emery Gold Mining Company.—This company has started work on the Gold Hill gravel mine near El Dorado, extending from the Rose Hill Mine toward Cave City. At the Live Oak quartz mine, which the company is working under bond, a shaft is being sunk, and drifting and cross-cutting will soon begin. The property is well equipped with machinery. The company also has a bond on the Shepard gravel mine.

El Dorado County.

(From Our Special Correspondent.)

Gentle Annie.—This group of mines about 2 miles north from Placerville, together with several adjacent mines, has been bonded by Thomas Clark, who intends to start development work with Eastern capital.

Humboldt County.

(From an Occasional Correspondent.)

Dewey.—This mine near Gazelle, on the Southern Pacific, is attracting much interest. It is a small mine, but is reported to pay very well.

Orleans Bar Gold Mining Company.—This company is working a gravel bank near Orleans and clean-ups are reported satisfactory. No. 5 giants are used with 400 ft. head.

Los Angeles County.

(From Our Special Correspondent.)

Catalina Island.—On this island, owned by the Banning brothers, of Los Angeles, prospectors report the discovery of a valuable ledge of galena near the landing.

Mariposa County.

(From Our Special Correspondent.)

Ready Cash.—This group of mines 10 miles west from Hite Cove Mine is worked by a force of 5 men under Edward Fisher, with good results.

Nevada County.

(From Our Special Correspondent.)

Coe.—A bad cave is reported on this property east of Nevada City. Fortunately none of the miners were injured. The cave occurred in an abandoned stope between the 400-ft. and 500-ft. levels. Between the 300-ft. and 400-ft. the shaft has settled so that the walls have come together and the skip cannot pass.

Placer County.

(From Our Special Correspondent.)

Holman & Williams.—This firm has men at work on a promising 2-ft. ledge about 6 miles northwest from Colfax on the road to Gold Run. The shaft is down 55 ft. on rich ore, and a tunnel now in 145 ft. will reach the ledge about 240 ft. from the surface. Ore shipped returns about $40 per ton.

San Bernardino County.

(From Our Special Correspondent.)

Peacock Mining Company.—The group of copper mines in the Lava Beds District, 35 miles east from Daggett and 10 miles south of Lavic, comprising the Tip-Top, Kenton, Tip-Top Extension, Annex & Summit claims, has been purchased by this company, composed of New York men. The representatives of the company claim they will start development work on a large scale at once, and will erect a 50-ton concentrating plant. The first work will be a 600-ft. tunnel from the northeast side of the mountain to intersect work already done by Schrader & Company. Two lime claims and a mill site are included in the purchase. Most of the work has been done on the Tip-Top, which has a tunnel 435 ft. long and an upraise 120 ft. to the surface. Two winzes, one 50 ft. and the other 100 ft., have been sunk from the tunnel level. An 8-mile wagon road has been built to the property.

Shasta County.

(From Our Special Correspondent.)

De La Mar Smelter.—The railroad between this smelter and the mine is completed and it is expected that the roasters, smelters and converters will be in operation within 30 days. About 200 men are employed.

Keswick Power Company.—This company has been organized for the purpose of erecting a large electric plant at Shingletown, about 25 miles from Redding. The water will be taken from Mill Creek. The contracts for the electric machinery, water wheels and pipe have been awarded. About 4,500 H. P. will be generated. The power will be transmitted to the smelters and mines of the Mountain Copper Company, Ltd., and to the De La Mar Company's property.

Siskiyou County.

(From Our Special Correspondent.)

Happy Camp District.—It is reported that all the claims on the little streams in this district, including those on Indian Creek, are running full blast, with prospects of a handsome clean-up. Several hydraulic mines in the vicinity are working successfully. The recent rainfall was very heavy.

Old Greenhorn.—This blue gravel mine south of Yreka is to start up work in No. 1 shaft soon, if it gets dry, because of the powerful pumps operated by the Boston Company in shaft No. 2 Greenhorn. This latter gravel mine is being opened by drifting at the bottom of the shaft. Good prospects are reported.

Sheba Mining Company.—The whole plant of this company on Patterson Creek has been swept away by a snowslide. Most of the stock of the company was owned in San Francisco.

Tuolumne County.

(From Our Special Correspondent.)

Darrow.—This pocket mine, 3½ miles west from Sonora, is to be worked by Doyle & Oakes, who are getting in machinery and pipe. Water power will be used.

Hope.—The new 10-stamp mill below the main tunnel level has started and the prospects are that it will be kept busy for some time, as the property is worked with a full force.

Jacksonville District.—The new tramway connecting the Mammoth Mill and the Republican Mine is completed. The mill is running continuously on good ore. The engines at the Willietta and the Clio mills use oil as fuel. The Clio shaft is down 300 ft.

COLORADO.

Coal Production.—The official figures of the output of this mineral for 1900 are given as follows for the different fields: Southern field (around Trinidad and Walsenberg), 3,073,292 tons; Western field (Crested Butte, Newcastle, Cardiff), 807,516 tons; Northern field (Lafayette, Erie, Canfield, etc.), 719,748 tons; Central field (Canon City and vicinity), 644,740 tons; Southwestern field (Durango and vicinity), 122,270 tons. The northwestern field in Routt County was not worked on account of its distance from railroads, except a few thousand tons for domestic local

consumption, but it is known to be the largest in the State. The output is divided into classes as follows: Bituminous and coking, 3,690,020 tons; semi-bituminous, 890,514 tons; lignite (Northern and El Paso fields), 822,206 tons; anthracite, 59,204 tons; total, 5,461,944 tons.

Gilpin County.

(From Our Special Correspondent.)

Mining Deeds.—L. J. Moulton to Clara Lansing, ½ interest in Jack Lode; J. R. Phillips to Lydia A. Anderson, 1/3 interest in Wolverine Lode and ½ interest in improvement and machinery; E. A. Littler to Hy. Baer, 1/3 interest in Lord Beaconsfield group of 6 claims; M. A. Lorah to L. F. Sraughn the Manahan Lode; A. J. Smith to the London & Colorado Mining and Exploring Company, the Clarence group of 4 claims; Wm. Leigh to T. George, ¼ interest in Harry Leigh and Jessie Leigh Lodes; Thomas Cody to R. C. Barker, east 1,200 ft. of Whiting Lode.

Alpha Gold and Silver Mining Company.—A strike in the 6th or bottom levels gave values of 6.29 oz. gold and 5.7 oz. silver per ton. The company expects to sink at an early date. John Grant, Central City, is in charge for the British syndicate.

Coal Scarcity.—On account of the coal miners' strike in Boulder County, there is a scarcity of fuel. Some mines have had to use cord wood, but generally speaking, the mines were prepared for an emergency. Production may be cut down this month, as the coal will only be used for pumping and not for hoisting.

Gilpin & Boston Gold Mining Company.—This company recently acquired the Nemaha property and in cleaning out the 300 east level a streak of ore carrying values of 8.40 oz. gold and 5 oz. silver or $171 per ton was discovered. W. Ballantyne, Central City, is manager.

Kansas-Burroughs Consolidated Mining Company.—During December the shipments were 2,436 tons of ore, all of which was milling, except 50 tons of smelting ores. The shipments were curtailed on account of surface improvements, but this year an increase in output may be loked for. Pat McCann, Central City, is manager.

Metal Miners' Corporation.—This company, composed of Denver men, is retimbering the shaft on the Gettysburg on Bates Hill and taking out the water, to its depth of 675 ft. F. W. Kroenke, Central City, is manager.

National Tunnel and Mining Company.—A contract has been let to J. R. Quigley & Company to erect a building 20 by 40 ft. for machinery, and the company has placed an order for a 32-H.-P. gasoline engine, dynamo and motor and will use electric drills. J. J. Reilly, Central City, is manager.

Patch Mining Company.—Two new 500-gal. water buckets are now handling the water in the big California shaft. As soon as possible miners will be put to work. Pat McCann, Central City, is manager.

Lake County—Leadville.

New Elkhorn Mining Company.—At the poll taken in the company's office in London on December 28th the stockholders, by a majority of 202,859 votes, decided to prosecute further developments on the company's Leadville properties with the funds now available.

(From Our Special Correspondent.)

Banker Mining Company.—This New York company, headed by John Guth, is still carrying on important work on Breece Hill property. Several new drifts are following good streaks of mineral.

Big Six Mining and Milling Company.—At a meeting of the stockholders of this company, held on January 5th, the following directors were elected: J. C. Hummel, T. G. Lyster, A. B. McGill, E. M. Englebach, F. L. Sigel, L. H. Kemble and H. L. Aller. The following officers were also elected: J. C. Hummel, president; T. G. Lyster, vice-president; A. B. McGill, secretary, and E. M. Engelbach, treasurer. The property is located on Breece Hill in the immediate vicinity of the Penn, the Ballard and other prominent mines.

California Gulch Mining Company.—The diamond drill explorations and several drifts are going ahead. A meeting of the company will be held February 1st.

Cloud City Mining Company.—The new machinery is in place and a contract has been let to sink to contact. This is the latest downtown shaft and is in the heart of the residence portion on the east side.

Coronado Mining Company.—Development and prospecting work is sufficiently completed to permit of steady shipments of iron ore from the new levels at 660 ft. Shipments open with 100 tons per day.

Diamond Mining Company.—The damaged machinery is repaired and the shaft is now 800 ft. deep. It is after the lower ore shoots already opened in the Dollie B and Resurrection.

Dinero Leasing Company.—The new leasing company is getting out the water preparatory to opening the old drifts and will sink another 50 ft. to cut another ore shoot.

Fanchon Placer.—Two shafts are being sunk and are down about 60 ft. They are to cut veins known to cross this territory.

Home Extension Mining Company.—The new shaft, which a few weeks ago struck iron ore and water, has succeeded in getting out the water and sinking shows a 30-ft. iron body averaging $3 to $4 a ton. It is believed that underneath a good carbonate ore body will be encountered. Messrs. W. G. Reed and B. Wilkinson, of Boston, who are interested, are looking over this proposition.

M. N.—This fraction near the Ibex No. 4 dump, which produced so satisfactorily early last year, is again to resume, the litigation between the lessees being settled. There are large bodies of sulphide ore opened up.

Ohio Mining and Leasing Company.—Sinking was resumed recently at 200 ft., and at 215 ft. there is a showing of 6 ft. of low grade sulphide.

Poverty Flat Mining Company.—This company has started another new shaft on its territory, this time on the Whale claim. After sinking a short distance further exploration will be done with a churn drill. Work of development still continues with very satisfactory results on the other shafts being operated by this company.

Rialto Leasing Company.—The pumps on the Rialto are throwing 1,000 gal. per minute from the 1,100-ft. level, but the real battle will begin at 1,200 ft. The company is prepared to push work.

Small Hopes Mining Company.—The increased shipments, 175 tons daily, will be continuous. The tonnage is largely sulphide ore coming mainly through the R. A. M. workings. The Emmet shaft is producing 25 tons per day.

Teller County—Cripple Creek.

Gold Bond Gold Mining Company.—Work is temporarily suspended for a few days to install new machinery. A 10 by 12 hoist will be placed on the shaft. It is understood that a contract has been let for 300 ft. The property is on the south slope of Gold Hill and takes in what is known as the Sweet Mine, which created quite a stir some years ago.

Golden Cycle Mining Company.—The property of this company, consisting of the La Bella, Legal Tender, Harrison and part of the Anna J., Pinkerton, Propolite and Banner, 25 acres on the south slope of Bull Hill has just been sold to J. T. Milliken, of St. Louis, and Tucker Ballard and Shepherd, of Colorado Springs and Cripple Creek. This is one of the most important transactions of the season, as the Golden Cycle Company, though a close corporation, is well known as one of the strongest in the district, having produced about $1,700,000 and paid in dividends over $300,000. The Legal Tender, which is the principal mine on the property, has been a large shipper.

Continental Oil Company.—It is understood that this company, which has been operating in the district for some time, has obtained a lease on the Colorado Boss No. 3, of the Cripple Creek Consolidated Company, and on the Morning Glory No. 4 of the Work Company, comprising about 8 acres in all, and which will be worked through the Ophelia Tunnel. The company has been operating for some time on Copper Mountain in the Ft. Wilcox Tunnel.

Ingham Consolidated Gold Mining Company.—This company paid a dividend January 10th, inst., of $6,850, derived from the royalties paid by the lessees. The company owns 375,000 shares in the Doctor-Jack Pot consolidation.

Mary McKinney.—The lowest level is unwatered and a considerably increased output is looked for.

Sedan Gold Mining Company.—Machinery has been installed on the Anna Belle claim on Galena Hill. It is understood that the shaft will be sunk 200 ft. before much production will be attempted.

Vindicator Gold Mining Company.—At the annual meeting in Denver on January 10th, the following directors were elected: F. L. Sigel, president; F. G. Campbell, secretary; A. J. Zang, treasurer; G. S. Wood, vice-president; and C. F. Potter. The reports will be ready for publication shortly. A dividend has been declared at the same rate as the last one. The reduction was due to the expense of putting in new machinery and investing in the Union Mill at Florence.

IDAHO.

Boise County.

North Star.—Development at this mine is reported highly satisfactory. The long tunnel cut the vein at a barren point. Drifting has been in progress some time, and the face of the drift is now in a large body of low-grade ore, which is said to run $6 a ton, $2.50 of which is free gold. A similar body of low-grade ore was found in the upper works before the rich shoot was encountered.

War Eagle Company.—The quit-claim deed conveying the Viola Mine in Hornet District from John D. Gray to this company has been filed in the county clerk's office. The property sold for $16,000.

Idaho County.

Buffalo Hump Mining Company.—At special meetings of the stockholders of this company and the Empire State-Idaho Mining and Developing Company, held in New York City on January 14th, propositions of the directors to reduce the capitalization of the former company from $3,000,000 to $1,000,000 and to increase the capital of the latter from $1,000,000 to $6,000,000 were ratified. The interests of the two companies are understood to be largely identical, and the action of the stockholders was said to be to allow one company to part with an investment and the other to purchase it. The business of both companies is stated to be satisfactory.

Owyhee County.

Pauper Mining Company.—John Russell, superintendent for this company, is in Silver City to institute large development on the property. No attempt will be made toward erecting houses till the snow has gone. The work to be started will be drifting south on the fourth level toward California ground, owned by the same company. The shaft on the Pauper is now down over 500 ft. on the vein.

Shoshone County.

There are now said to be 2,302 men employed by the different producing mines, exclusive of the Gold Hunter, in the Coeur d'Alenes. The addition of the office forces of the different companies would make a total of almost 2,400 men employed by the 10 mines, the monthly pay-roll amounting to upward of $250,000.

With the organization of the employment agency for hiring men for 9 of the 10 mines, statistics are closely kept and are obtainable by the public. The agency had been in operation just a month previous to the first of this year, during which time 330 men had been engaged by it. More than two-thirds of these were native born citizens, the nativities of the men being as follows: American, 223; English, 16; Germans, 15; Canadians, 14; Swedes, 12; Finlanders, 9; Irish, 7; Austrians, Scotch and Welsh, 5 each. Italy, South America, South Africa, Australia, Switzerland, Denmark, Russia and France were each represented by from 1 to 3 men. Of 1,677 men employed by the mines from which full reports of the nativity of their crews had been received, 1,065 were Americans, and the only other countries which furnished over 50 were: Sweden, 125; Canada, 84; England, 67; Finland, 66, and Germany, 63. Italy, Austria, Norway and Ireland were the only other countries furnishing as many as 25.

Empire State-Idaho Mining and Developing Company.—This company, with its principal office in New York City, has filed with the Secretary of State of New York a certificate of an increase in its capital stock from $1,000,000 to $6,000,000. In the certificate it is said that the capital actually paid in is $1,000,000, and that the debts and liabilities do not exceed $50,000. The certificate is signed for the company by Alexander Milne and Russell S. Walker.

MICHIGAN.

Copper—Houghton County.

Quincy.—The December output of mineral was 826 tons, 1,730 lbs. This breaks old records and is due to the addition of a new head in the stamp mill and the completion of No. 7 shaft.

Copper—Ontonagon County.

Michigan.—The diamond drill in B shaft has tapped the water in the old Minnesota workings and the pump is started. The drill hole taps the Minnesota about 200 ft. below the water level and the plan is to sink B shaft and use the drill from time to time until the old workings are entirely freed. The distance from B shaft to the old workings was found to me about 120 ft. A tunnel is now being driven across the Michigan property to prove up its lodes. Two crews, which started at the South Bluff and are working on day and night shifts, are pushing the work.

(From Our Special Correspondent.)

Globe.—It is again rumored that this property will be floated. It is controlled by John Stanton, of New York.

Kaukauna.—A rumor has gained credence that this property will be floated shortly.

Iron—Gogebic Range.

(From Our Special Correspondent.)

The report that the Carnegie Steel Company is to build a railroad from its Ironwood and Bessemer mines to Lake Superior east from Ashland is untrue. The company will continue to ship to Ashland docks over the Northwestern and Wisconsin Central roads.

West Colby Mining Company.—This company has an option on the old Colby, famous in the early days of the Gogebic range, and will open it as a part of the West Colby. The latter is

owned largely by the Hinkle furnace interests at Ashland.

Iron—Marquette Range.

Northwestern Iron Company.—This company at Mayville, Wis., is said to be negotiating for a lease of the Lucy Mine at Negaunee, and plans to pump out and equip it. The royalty stipulated is 7c. per ton, up to 60,000 tons, and after that on a sliding scale that will average somewhat more, with the privilege of purchasing the fee at any time.

Iron—Menominee Range.

Chapin Mining Company is installing 2 pumps in B shaft. The larger is a triple-expansion pump, with capacity of 1,200 gal. per minute, and the smaller a direct-acting triple-expansion pump. These will give the company one of the largest pumping plants in the Lake Superior iron region. The pumps are furnished by the Fred M. Prescott Steam Pump Company, of Milwaukee.

(From Our Special Correspondent.)

Mansfield.—This property, a few miles out of Crystal Falls, has been bought by the Oliver Iron Mining Company after negotiations extending over several months. The mine is the only Bessemer producer near Crystal Falls and has never been satisfactorily opened, but looks better now than at any preceding time in its history, and will be thoroughly developed. C. S. Bennett, late of the Crystal Falls, will have charge. The mine has shipped nearly 400,000 tons of ore that assays about 61% iron and .049 phosphorus. In 1893 the Michigamme River broke in and 28 men were drowned. The mine was idle till 1897, when the river was diverted and since then it has been growing as a producer. Crerar, Clinch & Company and B. Penwell, of Chicago, have been the owners under lease.

MINNESOTA.

(From Our Special Correspondent.)

The Alpha and the Beta iron companies have been incorporated with capital stocks of $50,000 each, and each with these incorporators: C. P. Coffin, L. T. Beecher, W. W. Watson, Jr., H. L. G. Lightcap and J. H. Chandler. They are subcompanies of the Minnesota Iron Company.

Iron—Mesabi Range.

(From Our Special Correspondent.)

Commodore.—Eight hundred tons of ore are coming up daily at this Virginia mine, and will probably all winter and to the close of navigation, making a probable output for 1901 of 250,000 tons. The stockpile already has some 40,000 tons.

Franklin Mines.—Stocking is going on very heavily, though the Victoria shaft is not open. The group now includes the Union shaft, which is hoisting heavily for a property yet in development stage. It is being opened underground and will be ready for stoping before many months. The ore is of a high grade and will be shipped over the Duluth & Iron Range road. A stockpile ground for 100,000 tons has been made.

Oliver Mines.—The Mountain Iron, Oliver, Ohio and Lone Jack are absolutely idle, except for a little machine shop and other work at the Mountain Iron. No increase in the stripped area is contemplated before warm weather, and no great amount then.

Scott Security Iron Company.—This company has been organized by P. W. Scott and others to control a property near Buhl. Its capital is $50,000.

Stevenson.—This property, closed shortly after navigation ceased, is worked. Ore will be stocked for shipment. The open pit will be worked also. Capt. J. C. Welsh is in charge.

Iron—Vermilion Range.

(From Our Special Correspondent.)

Minnesota Iron Company.—This company has made a find of high-grade ore at its Soudan mines. At about 1,000 ft. from No. 8 shaft a drill hole cut a lens of ore 72 ft. wide, and it is quite probable that the find is large. Arrangements will be made to begin mining it. The company's Soudan mines have not been mining Bessemer ore for a year or two, but this find will probably put them back in the list of Bessemer producers.

MISSOURI.

Jasper County.

(From Our Special Correspondent.)

Joplin Ore Market.—The demand for both zinc and lead ore continues firm, and buyers took all they could get last week at $27 for zinc ore going 60% and better. A large amount of ore was purchased which could not be loaded on account of the scarcity of cars. The highest price paid was $27.30 for a large amount of ore from the Old Colony mines at Neck City delivered at Oronogo, thus making the price no better than $27—what was paid for the Oronogo, Stotts City, Joplin and Carthage high grade ores. Lead sold all the week at $23 per 1,000, the price since the first weke in September. Following is the turn-in by camps of the Joplin District for the week ending January 12th:

	Zinc lbs.	Lead lbs.	Value.
Joplin	2,437,300	462,810	$42,330
Carterville	1,354,300	153,800	17,389
Oronogo	687,290	8,630	8,724
Belleville	269,430	.....	3,503
Carl Junction	82,090	.....	1,002
Ash Grove	.....	18,150	400
Duenweg	130,650	80,470	3,288
Neck City	252,450	4,300	3,507
Peacock City	69,020	7,010	1,924
Galena-Empire	1,245,700	206,330	20,317
Aurora	900,720	22,480	9,770
Webb City	306,120	21 000	4,136
Central City	82,330	9,790	1,213
Cave Springs	81,450	16,880	1,365
Beef Branch	.....	55,120	1,268
Carthage	25,220	.....	277
Alba	66,240	.....	861
Spring City	60,640	21,240	1,185
Spurgeon	20,560	8,280	469
Stotts City	41,400	.....	560
Seneca	69,420	15,470	826
Granby	348,000	28,000	4,000
Total	8,330,330	1,139,760	$127,434
District total 2 weeks.	16,839,930	2,136,920	254,300

During the corresponding week last year, best grades of zinc ore sold at $35 per ton and lead at $28 per 1,000 lbs. The sales were less than last week by 695,280 lbs. of zinc and 139,700 lbs. of lead, but the value was greater by $18,464. For the first 2 weeks of last year, the sales were less than this year by 1,583,960 lbs. of zinc and 124,140 lbs. of lead, but the value was greater by $47,806.

Compared with the preceding week, the sales show a decrease in zinc of 179,270 lbs., an increase in lead sales of 142,600 lbs., and an increase in value of $568.

A representative of the smelters at Swansea, Wales, has been in the district making contracts with some heavy producers of extra fine zinc ore for ¼ of their total output for a year on the basis of $25 for 60% ore and $1 per ton increase for each per cent or fraction over 60%. It is said that a large number of contracts have been secured, but the matter has been kept quiet. The producers who have signed the contract think that the shipment of ¼ of the output of high-grade ore abroad will do away with any surplus and maintain domestic prices.

Mining Land Transfers.—Wingert Reitveld, trustee, has transferred to the Little Midway Mining Company 50 acres of land at Midway, 1½ miles northeast of Joplin, for $59,500. The Double R Mine on the Perry lease at Carterville has been sold to Ralph Corbin and A. L. Minnard, of New York, for $16,000. John Smith, of Carterville, has sold his 40-acre farm, 2 miles north of Oronogo, to W. M. Williams, of Carthage, for $29,000.

Chester Mining Company.—This company, on the land of the Leonard Mercantile and Realty Company in Chitwood Hollow at Joplin, has started a new 125-ton mill and will make a large weekly output.

Mastodon.—This new mine at Lehigh, owned by A. O. Nichols & Company, of Joplin, is opening up a rich body of ore at the 95-ft. level. A drift cut 25 ft. north and south shows ore 20 ft. high in each end. A mill will be erected as soon as the ground is opened enough. This is said to be the greatest mine ever opened at Lehigh, and has given a great impetus to prospecting.

Oliphant Mill.—The 100-ton mill built by J. D. Oliphant & Company in Cooper Hollow, Galena, less than 2 years ago, was totally destroyed by fire. The origin of the fire is unknown. The mill belonged to Melville B. Coburn, of New York, and was insured for only $2,500. Twenty-five men are thrown out of employment.

Portland Zinc and Lead Company.—The new power plant at Center Valley, between Webb City and Oronogo, is completed. The company has a lease on 40 acres of the Frisco land, which it has been developing for a year. A 20 to 30-ft. face of fine zinc ore was found in 14 out of 15 drill holes and at the highest point south of Oronogo a 3-compartment shaft 18 by 16 ft. was sunk. The ore is at 190 ft. and the shaft is down 160 ft. The power house is built of brick and corrugated steel and is 30 by 100 ft. It is equipped with an Ingersoll-Sergeant 10-drill air compressor; also a Lidgerwood hoisting engine, Cochrane feed water heater, Worthington boiler and pumps, a complete electric plant and two 100 H. P. boilers to furnish steam.

MONTANA.

Carbon County.

Mr. L. P. Sichler, of Red Lodge, who is interested in a dredging proposition on Clarke Fork, has gone to Chicago to make the final arrangements with the company formed to take hold of the proposition. Among the Montana people interested are T. F. Pollard, J. M. Siegfried and J. M. Garrison, of Red Lodge. The company controls about 12 miles of placer ground on Clarke Fork, from near the Chance bridge to the mouth of the Little Sand Coulee.

Cascade County.

Commonwealth.—This group of claims at Neihart is to be tested under an 18 months' bond for $90,000 by A. Barker.

Park County.

American Kootenai Mining and Milling Company.—This company has been compelled to close down its stamp mill for repairs. The main shaft of the mill became sprung, probably from the settling of the foundation, and a new shaft will have to be put in. On account of the present condition of the roads it is impossible to say how soon the change can be made, but it is probable that the mill cannot be in operation until spring.

Revenue.—Alexander Livingston has bonded from the First National Bank of Butte this mill at Jardine, conditioned for the payment of $50,000 before February 21st, 1901. Mr. Livingston is now in full control of the Revenue Mill and the Robinson Mine in Bear Gulch. Spokane mining men are reported interested.

Robinson.—A. W. McDonald and E. D. Ferguson have bonded this claim in Sheepeater District to Alex Livingston for $18,000. The bond is to be paid in installments, the last of which falls due in June, 1902.

Madison County.

Diamond R.—The addition to the concentrator is about finished. The work of building the tramway to the Broadwater Mine is pushed rapidly and a large force of carpenters has been framing the timbers. The company is working a large force of men.

Lake Shoe Mining and Milling Company.—The company's new saw-mill has been destroyed by fire recently. The engine and boiler, together with 25,000 ft. of lumber, were saved.

St. John.—E. M. Wade has taken a lease on this mine near Virginia City. The mine is the property of Mr. Reed, of that place, and has produced some very rich ore. Mr. Wade expects to do some sinking and drifting.

NEVADA.

Humboldt County.

Nevada Copper Company.—This Philadelphia, Pa., company was incorporated in June, 1899, with W. W. Gibbs, of Philadelphia, Pa., president; C. E. Platt, secretary and treasurer, and C. E. White manager. The company controls a property 40 miles southeast of Lovelock, which it is developing. The ore carries copper and silver. A 50-ton Fraser & Chalmers water-jacket smelter has been erected, as well as necessary buildings. The company is now hauling in fuel and states that it expects to blow in the smelter by April.

Storey County—Comstock Lode.

Bullion Mining Company.—The annual meeting was held in San Francisco, January 9th. The amount of stock represented was about 70,000 shares out of about 90,000 shares outstanding, the remainder of the 100,000 shares of capital stock being in the company's treasury. The old board of directors was re-elected for the ensuing year, composed of Thomas Cole, Charles Hirshfeld, William Bannan, Geo. C. Sneider and A. F. Coffin. Thomas Cole was elected president; Charles Hirshfeld, vice-president; R. R. Grayson, secretary, and A. C. Kyle, superintendent.

NEW MEXICO.

At the annual meeting of the White Knob Copper Company, Limited, held in Jersey City last week, the following directors and officers were elected: Directors, Edward J. Mathews, Wilbur K. Mathews, Chas. B. Van Nostrand, Edgar C. Bradley, Edward C. Platt, Wm. E. Spier and Chas. G. Funk; officers, Edward J. Mathews, president; Chas B. Van Nostrand, vice-president and treasurer, and Chas. G. Funk, secretary. An officer of the company stated that the property of the old company, known as the White Knob Copper Company, of West Virginia, will be transformed and the company liquidated at an early date, as practically all of the capital stock has been exchanged for stock of the New Jersey company.

Grant County.

Clifton Copper Company.—The Ashton and Roach mines, at Santa Rita, have been sold to this New York City company for $125,000. The group consists of 8 claims.

OREGON.

Baker County.

Baby McKee Gold Mining Company.—This company has 3 8-hour shifts at work at Cable Cove. A 2,500-ft. tunnel is being run to crosscut the Cincinnati, Chloride and Baby McKee ledges. Air drills are used in the tunnel. A force of 23 miners is employed.

Columbia.—This mine has installed the biggest mine pump in the east Oregon gold-fields. It weighs 17 tons and will lift water from the 625-ft. lever. Frank S. Baillie is manager.

Yum Yum Gold Mining Company.—This company, of Cleveland, O., it is said, has purchased for $60,000 the Gunner group of claims in the Greenhorns, and will begin work in the spring.

Crook County.

Eldorado.—This claim on Lookout Mountain is reported to show a large ledge of free milling ore. The district is about 30 miles east of Pineville and in a spur of the Blue Mountains.

PENNSYLVANIA.

Anthracite Coal.

At a conference of anthracite coal road presidents, held in New York City, the contract with independent operators and the idewater price of coal was discussed. It was reported that the roads agreed to pay the operators 65% of tidewater prices on prepared size, 50% on pea, and 40% on buckwheat, and agreed to establish a rate of $4.50 per ton for the winter, $4 for the spring opening and $4.25 for the summer rate.

Babylon.—The strike at this colliery at Duryea was ended, but started again. The breaker boys went out because the breaker boss was not reinstated. This throws 450 miners idle.

Central Railroad of New Jersey.—The terms of the Reading purchase were announced January 14th by President Maxwell, of the Jersey Central, in the following notice to stockholders: "The holders of more than a majority of the stock of the company have sold through George F. Baker to J. P. Morgan & Co. a controlling interest in the company at the price of $160 per share, deliverable and payable at the purchasers' option within 4 months of January 4, 1901, with interest from that date at 4% per annum, the dividends meanwhile accruing to the purchasers. The sellers desire to give opportunity to all owners of stock to participate in this sale on equal terms."

Delaware and Hudson Company.—This company intends making changes in the machinery at Coal Brook breaker. The Link Belt Engineering and Construction Company, of Philadelphia, has men at work remedying the defects.

Lehigh Valley Railroad Company.—At the Lehigh Valley annual meeting in Philadelphia, January 15th, at the company's office, Col. Louden Snowden presided. The directors elected are: B. Borie, J. Wharton, E. T. Stotesbury, Irving A. Sterns, A. Nesbit, Wilson S. Bissell, E. B. Thomas, president of the Erie Railroad, George E. Baker, J. Rogers Maxwell, president of the New Jersey Central, Geo. F. Baer, Robert C. Lippincott and Chas. Steele. The last 6 named are new members, taking the places of Chas. Hartshorne, Elisha P. Wilbur, John B. Garrett, Eugene Delano and Robert M. Galloway, who retire, and filling one vacancy. When the new board organized Alfred Walker was re-elected president. No successor to Vice-President Garrett, who resigned, was elected. John R. Fanshaw was re-elected secretary, M. C. Alderson treasurer, Edward J. Hartshorne assistant secretary.

Pennsylvania Coal Company.—The formal transfer of the property of this company, embracing all the 18 mines at Dunmore, Old Forge, Avoca, and in and about Pittston, together with the Erie & Wyoming Valley Railroad, with nearly 70 miles to track, to the Morgan syndicate, took place in New York City January 15th.

Ravine.—Preparations are under way at this mine in Pittston to drain the mine workings, dispose of an old culm pile and preventing a further settling of the workings. A long line of ladders has been placed in the shaft and through this and an old airway culm will be flushed.

Shamokin Coal Company.—At the request of the miners this company will operate the Natalie colliery 10 hours a day instead of 9.

Williamstown.—There is a lockout at this colliery, owing to certain demands of the miners, which were refused. It throws 1,600 men out of work.

Bituminous Coal.

Monongahela Coal Company.—This company has optioned a big block of coal land north of Burgettstown station. It includes all the farms from the railroad to and beyond Florence. W. L. McIlvaine, of Washington, has been conducting the negotiations. The prices have not been given out.

Umberger.—This coal mine, near Somerset, has been purchased by Pittsburg men, who will equip it with new machinery and greatly increase the output. The mining and surface rights, about 36 acres, were included in the deal.

(From Our Special Correspondent.)

Riverview Coal Company.—This company, composed of Francis Rocks, Bernard O'Connor and John Poundstone, of Connellsville, and J. C. Work and E. D. Fulton, of Uniontown, has bought a tract of land in Nicholson Township, Fayette County. The price paid was $475 an acre, which equals the highest price ever paid in southern Fayette County.

Continental Coke Company.—Shaft No. 1 is now down 195 ft. The shaft, when completed, will be 400 ft. deep. All of the shaft, so far, has been through solid rock. The unusual flow of water is now under control. Work has begun on the steel tipple for the No. 1 coke works near Uniontown. About 30 ft. of the structure is completed. The American Bridge Company is doing the work.

TEXAS.

Jefferson County.

On January 10th an oil well, about 3 miles south of Beaumont, which was being drilled by Captain A. F. Lucas, blew out 600 ft. of 4-in. pipe and for several days a stream of oil 6 in. in diameter spouted from 100 to 150 ft. high. The oil is pronounced a superior grade of light oil with paraffine base. It is estimated that the flow is anywhere from 5,000 to 16,000 bbls. per day. Prospectors have been wildcatting in this county for years, but this is the first successful well and a valuable field is thought to be discovered. The fie'd is about 200 miles southeast of Corsicana and is 40 miles north of Sabine Pass on the Gulf Coast.

The excitement created by the well is very great and many rigs will soon be at work wildcatting over a large area, some rigs even going as far east as the Louisiana State line. Real estate values near the well have gone up with a rush and all sorts of prices are asked for land.

UTAH.

(From Our Special Correspondent.)

Bullion and Ore Shipments.—During the week ending January 12th there was sent forward from the several smelteries of the State 71 cars, or 3,076,240 lbs., of silver-lead ores; 10 cars, or 412,401 lbs., of silver-lead bullion; 5 cars, or 238,864 lbs., of copper bullion.

Juab County.

(From Our Special Correspondent.)

Tintic Shipments.—The shipments from the 3 outlets by rail from the Tintic District for the week ending January 12th are: Ore, 64 cars; concentrates, 3 cars; bullion, 2 cars. Total, 69 cars, distributed as follows: Centennial-Eureka, 23; May Day, 2; Eagle & Blue Bull, 1; Mammoth, 10 cars ore, 3 cars concentrates, and from Mammoth Mill 2 cars bullion; Grand Central, 11; Clarissa, 6; Swansea, 7; Tesora, 3; Star Consolidated, 1 car.

Piute County.

(From Our Special Correspondent.)

Annie Laurie.—The new cyanide mill, the finest in the State, just completed by the Annie Laurie Mining Company, started last week. Contractor Joe Deitrichs, who erected the plant, was present and reports the mill as moving off very nicely. In the meantime the bins are full of good milling ore, the crushers are ready, and the plant, as soon as all adjustments are perfected, should begin to reimburse its shareholders.

Salt Lake County.

(From Our Special Correspondent.)

Utah Consolidated.—Two cars of copper bullion were received this week from the Highland Boy.

Summit County.

Daly-West Mining Company.—The Boston Stock Exchange has listed 150,000 shares of this company of Salt Lake City. The officers are R. C. Chambers, president; J. E. Bamberger, vice-president; W. S. McCornick, treasurer; and J. Garnett, secretary. The above, with the exception of Mr. Garnett, constitute the directorate with the addition of Ezra Thompson and J. D. Wood.

The Boston Stock Exchange listing notice says: "The expert's report, dated July, 1899, states that the property is situated near Park City, bounded on the northeast by the Daly Mine and on the southwest by the Anchor Mine. It consists of 60 patented claims, containing 162½ acres, and covers 3,000 ft. of the vein along its strike. Three veins, the Daly, the South, and the Ontario, are known to exist. All the work done has been on the Daly vein; the South vein has been developed at both ends of the property in the Daly and Anchor mines, and considerable quantities of ore have been shipped. The Ontario vein has not been prospected. The equipment, including the necessary buildings, machinery, etc., has a present capacity of about 60 tons per day, and changes are being made which are expected to double this.

"The ore in sight in the ground 700 ft. long at the southwest end of the property is estimated to have a net value of about $2,237,000; the rest of the mine was not carefully inspected by the expert, as at the time of the examination it was dangerous to do so on account of bad air. The assays show the principal value to be silver, with some gold, lead and copper.

"Including shaft and levels, 4,090 ft. of development work was done during the past year, making total openings in mine 19,497 ft. The 1,200-ft. level has been connected with the Ontario drain tunnel and the Union Pacific Railroad Company has built a spur track to the mouth of the tunnel, greatly reducing the cost of handling ore and supplies."

(From Our Special Correspondent.)

Park City Shipments.—During the week ending January 12th the total smelter products marketed through the Macintosh Sampler, which represents the output of this camp, were 2,837,910 lbs., made up as follows: Daly-West, crude, 541,860 lbs.; concentrates, 724,150 lbs.; Silver King, crude, 1,366,780 lbs.; Anchor, concentrates, 205,120 lbs. This shows a healthy increase over last week and indicates that the mines are settling down for a record.

California.—Two strikes are reported by President Snyder in this mine. The first is a 20-ft. vein of milling ore crosscut at about 200 ft. below the surface, giving an assay of 14% lead and 6 oz. silver. In crosscutting from the stope on the upper tunnel level a new fissure was cut 5 ft. wide and running 64% lead and 24 oz. silver. The last strike was entirely unexpected.

Washington County.

(From Our Special Correspondent.)

Dixie.—A car of bullion, 29,000 lbs., was received in Salt Lake from this mine during the week.

WYOMING.

Carbon County.

Rambler.—The second shipment of ore from this mine in this county left January 6th for Denver to be treated in the Argo Smelter. The ore is copper sulphide, supposed to be high grade. The force of men at the mine has been increased.

FOREIGN MINING NEWS.

AFRICA.

Gold Coast.

Birrim Valley Gold Mining and Dredging Company.—A shipment of mining machinery to the west coast of Africa was made by the White Star liner "Nomadic" from New York recently. It consisted of a large dredging outfit and will be utilized in the gold mining operations of the Birrim Valley Gold Mining and Dredging Company, one of the many English concerns lately formed, with London capital, for the purpose of mining on the Gold Coast. The shipment included ladder dredger, 30 main dredger buckets, 80 stone elevator buckets, boiler, winch engine, etc. An electric light engine and dynamo were forwarded to permit of the machinery being worked both day and night. The outfit was supplied by the Risdon Iron and Locomotive Works of San Francisco, and was shipped overland to New York. It will be transshipped at Liverpool and then carried by Elder, Dempster & Company's regular steamer to Accra, a seaport on the Gold Coast. On arrival there the machinery, which consists of 690 packages, will be carried by coolies into the interior. It is anticipated that further important contracts for American machinery will be placed by other British companies recently incorporated for mining operations in the same part of Africa.

Rhodesia.

The Rhodesian Chamber of Mines reports the production of gold in Rhodesia for the month of November at 9,169 oz., or 4,499 oz. more than in November, 1899. For the 11 months ending November 30th the total output was 82,141 oz. crude, against 60,011 oz. in 1899; an increase of 22,130 oz., or 36.9%, in 1900. The output last year was equal to 67,355 oz. fine gold, or $1,392,228.

Cape Colony.

De Beers Consolidated Mines, Limited.—A statement from the London office reports the revenue for the six months ending December 31st at £2,171,000 and the expenses £683,000; interest and redemption of debentures amounted to £192,000, making the total charges £875,000, and leaving a net balance of £1,296,000 for the half-year. A dividend of 20s. a share, or 20%, has been declared for the half-year.

ASIA.

India—Mysore.

Colar Gold-field.—The total output for December is reported at 43,697 oz., the largest ever made in one month. For the year ending December 31st the total was 495,030 oz. crude, which compares with 446,323 oz. in 1899, showing an increase of 48,707 oz., or 10.9%. The total for 1900 was equivalent to 445,527 oz. fine gold, or $9,208,943.

AUSTRALASIA.

New Zealand.

(From Our Special Correspondent.)

Dredging.—For several weeks the Otago dredging returns have fallen off, owing to the usual rise at this season of the Molyneux River from the melting of the winter's snow. The returns have averaged about 1,000 oz. per week, or from 25 to 30 oz. per dredge publishing returns. It is not likely that the average will rise till the river begins to fall. On the west coast several new dredges have begun work, but so far results are only moderate.

Hauraki Goldfield.—During the 5 weeks ending December 3d the returns totalled £58,342 ($291,710). The chief producers were: Waihi, £28,946 ($144,730) from 11,814 tons; New Zealand Crown, £6,051 ($30,255) from 3,086 tons; Barrier Reefs, £5,577 ($27,885) from 1,758 tons; Waitekauri, £4,681 ($23,405) from 2,162 tons; Talisman, £2,178 ($10,890) from 900 tons; Union-Waihi, £1,462 ($7,310) from 1,542 tons.

Queensland.

Mount Morgan Gold Mining Company.—This company reports for November 15,893 tons of ore treated, the yield being 12,306 oz. gold, an average of 0.77 oz. per ton. In the three months ending November 30th the total ore treated was 57,424 tons and the product 50,911 oz. gold, an average of 0.89 oz. to the ton.

Tasmania.

Mount Lyell Mining Company.—This company's statement for the four weeks ending December 12th shows 21,621 tons of ore smelted, the product being 711 tons blister copper, containing 703 tons fine copper, 48,263 oz. silver and 2,035 oz. gold. The average yield was 3.25% copper, 2.23 oz. silver and 0.09 oz. gold to the ton.

Western Australia.

Gold exports for December are reported at 149,331 oz. For the year ending December 31st the total gold exported or delivered to the Perth Mint was 1,581,148 oz. crude. In 1899 the total was 1,643,871 oz., showing a decrease of 62,723 oz., or 3.8%, in 1900. The total last year was equal to 1,414,468 oz. fine gold, or $29,237,045.

GREAT BRITAIN.

London & Globe Finance Corporation.—At a meeting in London on January 14th the stockholders voted to wind up the concern. Mr. Whitaker Wright had explained that the directors wanted £500,000 ($2,500,000) to pay the debts and several hundred thousand pounds sterling to carry on operations. The corporation's assets, he said, amounted to nearly £3,000,000 ($15,000,000).

In reply to queries Mr. Wright admitted that the Baker Street Railroad, which the directors are trying to sell for £500,000 ($2,500,000), is valued on the books of the corporation at £800,000 ($4,000,000).

MEXICO.

According to a press dispatch, I. J. Seligman, financial agent of M. Guggenheim, Son & Company, in Mexico, has announced that the negotiations for the purchase of the Guggenheim smelting and mining interests by the American Smelting and Refining Company are completed.

Sonora.

Cobre Grande Copper Company.—It now appears that the litigation over mining property in dispute between this company and the Greene Consolidated has not ended, as was announced by both factions recently. Attorney John Hawkins, of Prescott, Ariz., representing Axel Hollenberg and James Shirley, of New York, has filed papers for suit in intervention with a view of forcing the case in the supreme court of the United States. The new phase in the case threatens to prolong litigation a long time.

COAL TRADE REVIEW.

New York. Jan. 18.

Anthracite.

The newly chosen directorate of the Lehigh Valley shows that road openly under Morgan control. Evidently Morgan and Vanderbilt interests have very little more to do to control the situation absolutely. It is, on the whole, well that such control is now in sight. What between open dishonesty, gross incompetency, and visionary attempts to defy the common laws of supply and demand, the anthracite coal trade has been most wofully mismanaged. Great sums have been invested with pitifully small returns. So far as profits are concerned the future history of the trade cannot well be worse than the past.

The report of a meeting of the various coal road presidents recently seems to have had some basis of fact, particularly the statement that the independent operators are to receive from the railroads 65% of the tide-water selling price on egg, stove and chestnut, 50% on pea and 40% on buckwheat. This is an advance of 5% on prepared sizes, 10% on pea and 8% on buckwheat. At the same meeting the matter of maintaining prices for some months ahead was discussed, but it is not likely that the summer price was definitely settled. That matter will not be decided till after April 1st, when the mining rate has been settled.

In the West hard coal continues in demand. Supplies at Duluth are reported getting very low. Evidently consumers in Lake Superior territory will have to do without or pay for all-rail shipments. In Chicago territory business is fairly active, good enough to take up whatever is coming in by rail. At inland points east and along the seaboard, buying fluctuates with the weather; at present it has fallen off, but a cold wave will strengthen it. Taken all together, however, the demand is good enough to keep the collieries running full time, with no slackening of effort in sight yet. Stove and chestnut sizes are very scarce and continue to command a premium at many points of 25c. per ton or more for prompt delivery. The steam sizes, pea and buckwheat, are likely to be scarce till well into the spring and are selling at full circular figures.

We quote for free-burning white ash f. o. b. New York: Broken, $3.75@$4; egg, $4.25; stove and nut, $4.50; pea, $3; buckwheat, $2.25@$2.50; rice, $1.70@$2.

Bituminous.

The Atlantic seaboard soft coal trade shows signs of falling into a rather unseasonable dullness. The demand for the best grades of coal holds up well, but the poorest grades are in plentiful supply and may become a drug on the market. As the Pennsylvania Railroad is now the controlling factor in the seaboard soft coal trade, there is some curiosity to see what will be the result of any attempt to restrict production; some coals are not wanted, some are. Will the Pennsylvania company attempt to discriminate, or will it try to keep down production at all mines by poor car supply?

A little flurry was caused at the lower ports by the inquiries for coal for shipment to Nova Scotia. The coal is wanted for the Intercolonial Railway, which does not know just what may happen at the mines on which it usually depends, and wants a supply ahead. The total amount purchased is not 100,000 tons, as newspapers said, but probably under 25,000 tons.

In the Far East demand is slackening, though best grades are wanted. The poorer grades sell slowly, buyers picking and chosing. Along the Sound, and at New York Harbor, there is no particular change from last week, while all-rail trade holds up well.

In the coastwise vessel market freight rates continue remarkably low for this season of the year. Large vessels are in good enough supply, small ones are very scarce. It is said that the present rates are unprecedented for Winter service. Rates were higher last Spring. The only reason that seems weighty is the increase in tow barges. The largest of these carry coal very cheaply, and average better time between ports than sailing vessels, but they cannot go to all ports, only to those with deep water.

We quote current rates from Philadelphia as follows: Providence, New Bedford and the Sound, 65@70c.; Boston, Salem and Portland, 75@80c. Rates from the further lower ports are 5@10c. higher.

Birmingham, Ala. Jan. 14.

(From Our Special Correspondent.)

Alabama's coal production is increasing. All mines are in full operation and there is demand for every ton mined. Heavy contracts are being made for delivery during this year. There are no labor troubles in this State and President Ed. Flynn, of the miners' organization, reports that the miners are working harmoniously. It is believed that after February 1st the maximum price for coal mining—55c. per ton—will be paid again. At present 52½c. per ton is paid.

Elmer E. Wood, of B. D. Wood & Son, of New Orleans, has renewed contracts with Walker County operators for a supply of coal to be shipped via the Southern Railway and Greeneville, Miss., and thence down the barge line on the Mississippi River. His order will amount to at least 150,000 tons. The Southern Railway is party to the contract.

In 1900 coal and coke companies took out charter with the Probate Judge of this county, as follows: Stout Mountain Coal and Coke Company, capital stock $40,000; the Delma Mining and Coke Company, $6,000; the Cahaba Valley Coal Company, $32,000; Winston Coal Company, $50,000; Elk River Coal Company, $30,000; Empire Coal and Coke Company of Alabama, $700,000; Black Creek Coal Company, $14,000; Central Coal Company, $50,000; Palos Coal and Coke Company, $150,000. The majority of these concerns are now mining. The Empire Company will be mining within 4 months.

Chicago. Jan. 15.

(From Our Special Correspondent.)

Anthracite coal has been in quite limited demand, owing to the run of warm weather, the buying having fallen off materially. Small sales are the rule, enough for actual wants. Shipments for out-of-town trade are light, a few cars at the most to any one order. Prices remain firm at $5.75 for broken and $6 for domestic sizes f. o. b. Chicago. The supply of anthracite coal remains greatly below normal conditions and there is every likelihood of this state of affairs being with us for months to come.

Bituminous coal is in for greater supply than requirements would have it and accordingly prices are made on the best terms possible, but the consumer is getting far the best of it. No real frigid weather has as yet visited Chicago and to this fact may be placed the poor showing made in the soft coal line. Buying is almost wholly in small lots at present, but few large contracts being booked, even though inducements are offered. Cars carrying coal are lined up on tracks all over the city and something must be soon done to prevent demurrage charges.

Cleveland, O. Jan. 16.

(From Our Special Correspondent.)

A new line of railroad has been projected from Willoughby, near Cleveland, to Pittsburg, through Youngstown. Numerous efforts have been made of late to connect this with one of the coal companies operating in this vicinity. The statement has been that it is the intention of the Pittsburg field to find a market abroad through the lake ports and the lake and ocean-going craft, of which there is quite a fleet developing. All efforts of this sort have been without result, save to bring down the denials of the heads of the companies with whose names the new road was linked. There is in fact a grave doubt if the road will ever be built, although incorporated.

Affairs touching the coal market are quiet. There is a good heavy domestic demand with large shipments, but nothing outside of the ordinary. The most satisfactory feature is the ability of the railroads to handle more coal by reason of getting better dispatch from their cars. In this respect conditions have not been so good for months.

Pittsburg. Jan. 16.

(From Our Special Correspondent.)

Coal.—The rise in the rivers enabled the Monongahela River Consolidated Coal and Coke Company to get out nearly 15,000,000 bush. of coal. The last shipment to the Southern markets was made yesterday, when the water began to recede. Reports received here are to the effect that the last shipment of about 20,000,000 bush. to the Cincinnati, Louisville and New Orleans markets is about exhausted. All the mines in both the river and railroad fields are being operated to their fullest capacity. The annual convention of the miners of the Pittsburg District of the United Mine Workers of America opened here on Monday. It is the largest and most representative convention of miners ever held in this district. The mining rate for the year beginning April 1st is the principal matter under discussion and all sorts of advances have been proposed. This body, however, can do nothing except make recommendations to the national convention which opens in Indianapolis next Monday. Pick mining in this district is almost a thing of the past and for that reason some of the miners are urging that the new scale be based on machine mining instead of pick mining as has always been the custom. Some of the delegates present at the convention estimate that of the 22,000 miners in the Pittsburg District not more than 2,000 use picks. The advance to be demanded from present indications is likely to be heavier than what was conceded a year ago.

Connellsville Coke.—There was an increase in both production and shipments last week. Prices continue low, furnace coke being quoted at $1.75 and foundry at $2@$2.25. Outside producers are selling furnace coke at $1.40 and foundry at $1.65@$1.85. Of the 20,923 ovens in the region 16,665 are active and 4,258 are idle. The production in the Connellsville field last week was 187,786 tons, an increase over the previous week of 2,060 tons. The shipments aggregated 9,328 cars, distributed as follows: To Pittsburg and river tipples, 3,567 cars; to points west of Pittsburg, 3.837 cars; to points east of Connellsville, 1,924 cars. This was an increase of 826 cars.

San Francisco. Jan 5.

(From Our Special Correspondent.)

The fuel question in California is being modified by the production of petroleum and its use for fuel in many places. This served to keep down prices of coal last year, though the supply increased.

The receipts of coal by water at San Francisco for the year 1900 are reported as follows, in short tons:

	Tons.
Eastern (anthracite and Cumberland	17,259
Washington	642,272
Oregon	37,180
Total domestic	696,711
British Columbia	603,211
Australia	175,404
Japan	6,100
Great Britain	80,105
Total foreign	864,820
Total	1,561,531

The total receipts at San Francisco in 1899 were 1,446,997 tons, and in 1898 they were 1,436,375 tons.

In addition to the receipts by water it is estimated that the deliveries by railroad from the Mt. Diablo and Tesla mines in California and the Rocky Mountain mines in Wyoming were 160,308 tons, and the deliveries by water at Port Los Angeles and San Diego 165,965 tons more. This makes a total coal supply of 1,887,804 tons, against 1,740,027 tons in 1899 and 1,832,373 tons in 1898.

Shanghai, China. Dec. 12.

(Speecial Report of Wheelock & Co.)

Coal.—Japan coal is uninteresting. Cardiff coal has been sold in small quantities at a reduction. Nothing is doing in Australian coal. Arrivals for the fortnight were 11,095 tons. We quote per ton: Welsh Cardiff, 25 taels ($16.75); Australian Wollongong, cargo, ex-go-down, 12 taels ($8.04); and other sorts, 7.50@8.50 taels ($4.99@$5.96); Chinese, Kaiping lump, 7.50@10 taels ($4.99@$6.67); dust, 5 taels ($3.33), and mixed, 5.50@6 taels ($3.66@$4); Japan, all contracted for.

Kerosene Oil.—The market is very weak, and we can see no sign of any improvement. Stocks, including arrivals, are 611,000 cases American, 284,050 cases Russian; total, 895,050 cases. Quotations per case are as follows: American De-

voe's, 1.70 taels ($1.14); Russian Batum, Anchor Chop, 1.66 taels ($1.12); and bulk oil, 1.55 taels ($1.04) in two tins.

Foreign Coal Markets.

The disorganized condition of the foreign markets is having an unfavorable effect on coal exports, and few new contracts are noted. None of importance have been closed.

In Germany the coal syndicates are generally refusing to reduce prices, and purchasers are holding off as far as possible, hoping to force lower quotations.

In France also coal operators are refusing to reduce their prices, claiming that they cannot do so unless they reduce the miners' wages, and that such action will certainly be followed by a general strike.

Messrs. Hull, Blyth & Company, of London and Cardiff, report, under date of January 5th, that the market continues strong and prices are well maintained. Quotations are: Best Welsh steam, $4.80@$5.04; seconds, $4.56; thirds, $4.44; dry coals, $4.20@$4.44; best Monmouthshire semi-bituminous, $4.32@$4.56; seconds, $4.20; best small steam coa., $2.94@$3; seconds, $2.40@$2.52; other sorts, $2.28.

These prices for Cardiff coals are all f. o. b. Cardiff, Penarth and Barry, while those for Monmouthshire coals are all f. o. b. Newport, exclusive of wharfage, and are for cash in 30 days, less 2½% discount.

Tonnage has been offered very freely and is in excess of demand, so that rates have fallen materially. Some rates quoted are, from Cardiff: Marseilles, $1.50; Genoa, $1.80; Naples, $1.80; Port Said, $2.22; Singapore, $4.20; Santa Lucia, $2.04; Buenos Aires, $2.64; Rio Janeiro, $3.

SLATE TRADE REVIEW.

New York. Jan. 18.

The list of prices per square for No. 1 slate standard brand f. o. b. at quarries in car-load lots, is given below:

Size, inches	Monson or Br'nville.	Bangor.	Bangor Ribbon.	Alb'n, or Jackson Bangor.	Chap'n Keys'ne	Peach Bottom.	Sea Gr'n.	Unfad'g Green.	Red.
	$	$	$	$	$	$	$	$	$
24 x 14	6.50	3.50	3.00	3.00	.	5.10	3.00		.....
24 x 12	6.60	3.50	3.00	3.00	3.80	5.25	3.00	3.75	.....
22 x 12	6.60	3.50	3.25	3.00	....	5.25	3.00	3.75	.....
22 x 11	6.50	3.75	3.25	3.00	4.00	5.25	3.00	4.00	.....
20 x 12	6 90	3.75	.....	3 00	.....	5.25	3.00	3.75	.....
20 x 11	6.80	.....	.....	3.25	.	5.25	3.00	....	....
20 x 10	6.80	4.25	3.50	3.25	4.00	5.35	3.00	4.25	10.50
18 x 12	6.80	3.75	....	3.00	.....	5.25	3.00	3.50	.....
18 x 11	7.00	....	....	....	....	....	3.00	3.75	.....
18 x 10	7.00	4.25	3.50	3.25	4.00	5.35	3.00	4.00	10.50
18 x 9	7.00	4.50	3.50	3.25	4.00	5.35	3.00	4 25	10.50
16 x 12	6.80	3.75	...	3.00	....	....	2.90	3.50	....
16 x 10	7.00	4.00	3.50	3.25	4.00	5 25	2.90	4.00	10.50
16 x 9	7.00	4.25	.....	3 25	4 00	5.35	2.90	4.25	10.50
16 x 8	7.00	4 50	3.50	3.25	4.25	5.35	2.90	4.25	10.50
14 x 10	6 60	3.75	3.25	3.00	.....	5 25	2.70	3.75	10.50
14 x 9	6 50	....	.....	.....	....	....	2.70	3.75	10.50
14 x 8	6.60	3.75	3.25	3.00	4.00	5.10	2.70	4.25	10.50
14 x 7	6.40	3.75	3.25	3.00	3.75	5.10	2.50	4.25	10.50
12 x 10	5.75	....	.. .	....	.. .	...	2.50	3.25	....
12 x 9	5.60	....	.....	.....	... .	....	2.50	3.25	.....
12 x 8	5.50	3.50	.....	2.85	....	4 85	2.50	3.50	9.00
12 x 7	5.00	3.25	.....	2.85	3 25	4.85	2.00	3.50	9.00
12 x 6	4.80	3.25	....	2.85	3.25	4.75	2.00	3.50	8.50

A square of slate is 100 sq. ft. as laid on the roof

The "tomahawk" policy practiced by Bangor quarrymen in quoting prices to dealers and customers was buried at a meeting in Bangor, Pa., this week. New vows have been made by the different roofing slate manufacturers to maintain the schedule of prices herewith.. It will be remembered that the old Bangor Roofing Slate Manufacturers' Association at one time established a similar price-list, but with the increase in export trade quarrymen soon fluctuated their quotations to suit the consumer. Consequently, though the Association continued to exist, it had little influence on the general market conditions. A leading factor in the Bangor region to-day is the American Slate Company, which controls a number of quarries. Early this month it was consolidated with the Bangor Excelsior Company —a large producer—forming the Genuine Bangor Slate Company under New Jersey laws. It is said that this company controls nearly one-half of the output of genuine Bangor roofing slate. This fact doubtless carried some weight in arranging the new price-list.

In Vermont sea-green roofing slate makers report small unsold stocks, and it is estimated that they amount to less than 15,000 squares. Some makers ask from 5 to 10c. per square advance.

Maine quarrymen report a decreased output of roofing slate.

Export trade is quiet, although the strike at the Penrhyn quarries in Wales promises to be of long duration. For a time at least the stocks of Welsh slates in merchants' yards in Great Britain will satisfy the demand as building operations are only moderate. But there are signs that American roofing slate will be in demand in early summer. Freight rates continue on the basis of 13s. 6d. on contract to London, and 15s. in the open market.

IRON MARKET REVIEW.

NEW YORK, Jan. 18, 1901

Pig Iron Production and Furnaces in Blast.

Fuel used	Week ending Jan. 19, 1900. F'ces.	Tons.	Jan. 18, 1901. F'ces.	Tons.	From Jan., '00. Tons.	From Jan., '01. Tons.
An' racite & Coke.	254	288,325	201	244,150	782,595	627,816
Charcoal.	30	7,925	32	7,225	21,510	18,578
Totals..	284	296,250	233	251,375	804,105	646,39

The iron trade prospects are generally good, though buyers are still holding off on contracts for the second half of the year. Mills have generally their full capacity taken up for the first quarter of the year, and many for the second quarter also.

There has been a good business in structural material and in plates the demand is very large. Some large orders for rails have been placed also, the railroads having apparently made up their minds to close at present prices.

There will be a general reduction in iron and steel freights from Pittsburg, to take effect February 1st. In part this will be made by a straight cut and in part by changes in classification. On pig iron and billets the reduction will be about 50c. a ton; on other items from 15% to 20%. Whether this will put an end to talk of new plants on the lake shore and water shipments, is doubtful.

The reports current in New York of a Carnegie-Morgan combination to control the steel trade have been denied by the parties most interested. Perhaps the originators of the reports considered possibility rather than probability in manufacturing them.

Birmingham, Ala. Jan. 14.
(From Our Special Correspondent.)

The pig iron and steel markets are in a satisfactory condition. There is a decided improvement in the business. A good amount of inquiries are received, while demand is picking up. There is not much surplus iron left.

The Tennessee Coal, Iron and Railroad Company has blown in one of the furnaces which it had banked at Ensley and the other is being repaired. Four out of the 5 furnaces at Ensley are in operation. The Sloss-Sheffield Steel and Iron Company has 5 furnaces in blast. The Alabama Consolidated Coal and Iron Company has both its Ironton furnaces in blast, while the Shelby Iron Company, manufacturing charcoal iron, has its 2 furnaces at Shelby in blast. These 2 latter furnaces do not make a large amount of iron. There are 3 charcoal furnaces in the State in blast and there is a pretty fair demand for the iron from the car-wheel works.

The quotations are firm and furnacemen are making no concessions. The following are the prices given: No. 1, foundry, $11.50@$12.50; No. 2, $10.50@$11.50; No. 3, $10@$10.50; No. 4, $10; gray forge, $9.50@$10; No. 1, soft, $11.50@$12.50; No. 2, $10.50@$11.50.

The finished iron trade is fairly good and the mills are working steadily. The stocks on hand are not large.

The steel industry is still busy. Seven of the 10 open-hearth furnaces at the steel plant at Ensley are in operation and there is demand for all the steel manufactured. The steel wire, rod and nail mill is busy and the company is bringing in skilled laborers from Ohio and Pennsylvania. The plow factory at Ensley is using its full quota of steel.

Buffalo. Jan. 11.
(Special Report of Rogers, Brown & Co.)

We notice that more interest is now being shown in contracting further ahead for supplies such as pig iron and coke. Several good-sized sales have been made to those who have been putting off purchasing until inventory. The market remains firm on the basis mentioned below. We quote on the cash basis, f. o. b. cars Buffalo: No. 1 strong foundry coke iron, Lake Superior ore, $15.50; No. 2, $15; Southern soft, No. 1, $16; No. 2, $15.50; Lake Superior charcoal, $19.50; coke malleable, $14.75.

Chicago. Jan. 15.
(From Our Special Correspondent.)

Pig Iron.—There is only a small buying of pig iron, sales being mainly of small lots. Buying appears to have exhausted itself and the market is now a waiting one, the furnaces not pushing much for business as they are filled upon orders for about six months ahead. The inquiry for future business is light. Prices are strictly maintained and are likely to go higher. Quotations are as follows. Lake Superior charcoal, $18.50@$19.50; local coke foundry, No. 1, $15.75@$16; No. 2, $14.75@$15; No. 3, $14.25@$14.50; local Scotch foundry, No. 1, $15.75@$16; No. 2, $14.75@$15; No. 3, $14.25@$14.50; Southern coke, No. 1, $15.10@$15.60; No. 2, $14.60@$15.10; No. 3, $14.10@$14.60; No. 4, $13.60@$14.10; Southern No. 1 soft, $15.10@$15.60; No. 2, soft, $14.60@$15.10; Southern silveries, $16.25@$16.75; Jackson Co. silveries, $18.50@$20; Ohio strong softeners, $16.80 @$17.30; Alabama Car Wheel, $21.75@$22.75; malleable Bessemer, $15@$15.50; coke Bessemer, $15@ $15.50.

Cleveland, O. Jan 10.
(From Our Special Correspondent.)

Iron Ore.—Labor troubles which developed today threatened to hinder the movement of iron ore from lake docks to furnace stock piles unless adjusted. The union men, with whom the dock managers entered into an agreement, claim that additional articles were put into the agreement after they signed it that place a ban upon union labor. It is the effort to abolish this agreement that threatens the trouble. Aside from this possibility all is quiet concerning ore matters, the movement away from lake being moderately heavy. No meeting has been called as yet for the purpose of fixing the price of next season's ores, in the absence of which last spring's rates are quoted, although they are purely nominal.

Pig Iron.—Sales this week have been heavier than formerly and inquiries promise a good brisk business for the near future. Sales are made as far ahead as the first half of the year, beyond which buyers are cautious, fearing a radical change in prices. Prices hold firm as follows: Foundry No. 1, $14; No. 2, $13.50, Valley furnace; basic, $13.50; off basic, $12.50; Bessemer, $13.50, nominal. Some talk is still going of opening the idle Bessemer furnaces, but nothing more has developed.

Finished Material.—The leaders this week have been steel rails and structural irons. Rail sales have been very heavy, both for electric and steam lines. Recent sales of electric rails have aggregated 30,000 tons, with some big orders yet pending. Steam roads have also covered to the extent of several thousand tons. Sales of structural shapes have been very heavy, and there are now on the market inquiries for steel to an aggregate of 7,000 tons. Prices hold firm at 1.50c. on beams and channels and 1.40c. on angles. On plates and bars the large mills are covered for six months ahead, while others find it impossible to make deliveries short of nine or ten weeks. With all of this activity there is apparent some caution as to the business for the third quarter of the second half of the year. A small order for billets was placed this week, 600 tons having been sold for $19.75 a ton, Pittsburg.

Philadelphia. Jan. 16.
(From Our Special Correspondent.)

Pig Iron.—To-day's reports from brokers and agents emphasize the fact that the policy of consumers is to be cautious, buying in small lots of foundry and forge. After ore prices are determined the present intention of large users of basic and Bessemer is to place orders for large quantities. Foundrymen have bought very moderately so far. On a few brands small concessions were made. The larger production is regarded by users as an evidence of coming weakness. No 1 X foundry will sell at $17, No. 2 X at $16.25 and No. 2 plain at $15.25, though business is being done daily on certain brands at lower figures.

Billets.—The attempts to buy so far have been hampered by anticipations of cheaper ore. The amounts that have been sold this year are only to patch out with. Large consumers are rather anxious to get their requirements covered and will welcome a settlement of the ore question. The users of open-hearth are in need of stock.

Bars.—Within 48 hours orders for common iron have been placed at central and eastern Pennsylvania mills for large lots for delivery up to mid-summer. Refined iron is quoted at 1.40 @$1.50c. A fair business has been done in steel bars this week at 1.50c. There is sufficient competition on common iron business for large lots to depress quotations about $2 per ton, according to recent bids.

Sheets.—The fact that some parties who placed large orders in December are now extending their orders is taken as evidence that the market is strong and growing stronger.

Merchant Steel.—The action of so many large users of merchant steel in buying to stock up in November and December has given the market a strong tone. The rumor gains ground that for exceptionally large orders shadings are conceded. Crucible tool steel is not shaded.

Pipes and Tubes.—The export trade inquiries, according to reports, have reached very large proportions for the spring and that business is on the increase. The current retail business for our near-by territory is all that could be wished.

Plates.—The actual orders placed this past week have been small. Some of the business in sight will not be placed readily unless better terms are offered. For ¼-in. the asking price is 1.60c. Flange is very strong at 1.70c. Charcoal iron is in excellent shape.

Structural Material.—Reports to-day are confusing, although the representatives of manufacturers say the market is active and quotations strong. The bridge-builders have a large lot of new work in sight, but, as in some other branches, there appears to be a purpose to get

supplies lower. No large orders were placed this week here, but specifications are expected next week for a lot of office building work. Beams are 1.60@1.70c.

Scrap.—A large stock of scrap from navy yards and forts in the South is now being marketed as fast as possible. The Government is cleaning up its yards. Heavy steel scrap is particularly wanted and brings a good price—$16 being paid. There are orders for scrap now in dealers' hands and they are on the lookout for stuff.

Pittsburg. Jan. 16.

(From Our Special Correspondent.)

This was another week of large sales of Bessemer pig iron, but there was no improvement in prices. No contracts were made, however, for delivery beyond March 1st. The prices on some of the sales made are a shade lower than a week ago. An advance may be expected within the next two weeks, it is believed, that will be brought about either by a strike of the blast furnace employees on February 1st on account of the proposed reduction in wages to take effect on that date, or by a withdrawal of the order for a cut. The workers at the 29 blast furnaces in the Mahoning and Shenango Valleys were represented at a delegate convention held at Youngstown yesterday. At this meeting resolutions were presented and unanimously adopted rejecting the proposed reduction, and giving notice to the operators that if the proposed cut was insisted upon a general strike would be ordered, taking effect on February 1st. Sales of gray forge during the week were more than double the sales of the preceding week and prices were higher. The steel market has greatly improved and there was an unusually heavy tonnage in Bessemer steel billets at the pool price. The mills are still crowded with orders for plates and steel bars and but little new business was accepted this week. Prices are unchanged. The present rates on steel products will likely continue until the February meeting of the leading steel interests. There is but little change in sheets. The demand continues heavy and all of the mills are in full operation. The Carnegie Steel Company during the week let the contract for improvements and extensions at Carrie Furnaces, which when completed will cost about $1,000,000. The old furnace, known as No. 1, will be torn down and a new and much larger furnace built. The daily capacity will be increased from 300 to 750 tons. This is the last of the old Carrie furnaces to be rebuilt, the Riter-Conley Manufacturing Company having two under way at the present time. The improvements now being made, with the new contract, will involve all told an expenditure of over $3,000,000.

Pig Iron.—The sales of Bessemer pig iron this week amounted to from 8,000 to 10,000 tons. The prices were a trifle lower than last week, ranging from $13.25 to $13.40, delivered at Pittsburg. All sales were for shipment this and next month. Foundry iron is quiet, but few sales having been made at the same prices that ruled last week—$14@$14.50, Pittsburg. There was a decided improvement in gray forge, fully 5,000 tons having been sold at Bessemer pig iron prices, an advance over last week's sales of 25c. a ton.

Steel.—There was a good demand for Bessemer steel billets this week, sales aggregating over 6,000 tons at the pool price of $19.75, Pittsburg. This was the heaviest tonnage in several months. Steel bars remain at 1.25c. and tank plates at 1.40c.

Sheets.—The demand for sheets continues and the mills are busy, but prices are unchanged. A premium can be obtained for prompt shipment. No. 27 is still quoted at 2.85@2.90c. and No. 28 at 2.95@3c. Galvanized sheets are 75% off, with no freight allowance.

Ferro-manganese.—There is no change in the price of 80% domestic, the leading producer still quoting $62.50.

New York. Jan. 18.

The local iron market is showing some improvement. In foreign trade we note a shipment of 8 locomotives valued at $81,500 to Chile; shipments of $39,000 worth of manufactured iron and $15,000 worth of manufactured steel to Australia; shipments of $53,500 worth of steel rails, 4 locomotives valued at $21,000, $28,000 worth of car material, $62,000 worth of machinery and $15,000 worth of manufactured iron to Brazil; and shipments of $30,000 worth of mining machinery, $27,000 worth of manufactured iron and $10,000 worth of steel rails to South Africa.

Pig Iron.—Demand is fairly good, though mostly for small lots. Buying, however, is expected to start earlier than usual. We quote for Northern iron, tidewater delivery: No. 1 X foundry, $16.50@$17.50; No. 2 X, $15.50@$16; No. 2 plain, $14.75@$15.25; gray forge, $14.50@$14.75. For Southern irons on dock, New York, No. 1 foundry, $15.25@$15.75; No. 2, $14.50@$15; No. 3, $14.25@$14.50; No. 4, $13.50@$14; No. 1 soft, $15.50@$15.75; No. 2, $14.25@$14.50.

Bar Iron and Steel—Demand gives signs of improvement. We continue to quote common bars at 1.35c. for large lots on dock; refined bars, 1.45c.; soft steel bars, 1.40c.

Plates.—The market is generally quiet and prices are firmly held by the pool. We quote for large lots at tidewater: Tank, ¼-in. and heavier, 1.65c.; flange, 1.75c.; marine, 1.85c.; firebox, 1.85c.; universal, 1.60c.

Steel Rails.—A number of inquiries have come in from abroad, with prospects of some sales; delivery may not suit all inquirers. Domestic orders during the week have been few. Standard sections are still quoted at $26 at Eastern mills. Light rails at $26@$30, according to weight.

Structural Materials.—There are no very large orders reported. Prices are firm. We continue to quote at tidewater: Beams, 1.65c.; channels, 1.65c.; angles, 1.30c.; tees, 1.70c.; zees, 1.65c.

METAL MARKET.

New York. Jan. 18.

Gold and Silver.

Gold and Silver Exports and Imports
At all United States ports in December and year.

Metal.	December.		Year.	
	1899.	1900.	1899.	1900.
GOLD.				
Exports	$11,857,511	$410,533	$45,379,411	$54,134,623
Imports	5,620,246	3,375,552	51,334,964	66,738,025
Excess	I. $6,237,265	I. $2,965,019	I. $5,955,553	I. $12,603,402
SILVER.				
Exports	5,700,914	7,?58,339	53,461,737	66,221,664
Imports	3,026,219	3,014,558	30,843,929	39,760,494
Excess	E. $2,674,695	E. $4,343,781	E.$22,617,808	E.$26,461,170

These figures include the exports and imports at all United States ports, and are furnished by the Bureau of Statistics of the Treasury Department.

Gold and Silver Exports and Imports, New York
For the week ending January 17th, 1901, and for years from January 1st, 1901, 1900, 1899 and 1898.

Period.	Gold.		Silver.		Total Excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
We'k	$1,662,672	$8,670	$764 366	$12,706	E. $2,405,662
1901..	1,685,612	204.389	1,572.143	208,840	E. 2,814,526
1900..	1,049.292	136,440	1,691,817	169,119	E. 2,435,550
1899..	109,486	1,776 061	1,489,150	217,679	I. 395,104
1898..	1,311,385	1,772,333	2 224,768	244,638	E. 1,519,122

Exports of gold were to France and the West Indies; of silver chiefly to London. Imports of gold were from the West Indies; of silver from Central America.

The United States Assay Office in New York reports the total receipts of silver at 108,000 oz. for the week. This makes a total of 129,000 oz. from January 1st.

Average Prices of Silver per oz. Troy.

Month.	1900.		1899.		1898.	
	Lond'n Pence.	N. Y. Cents.	Lond'n Pence.	N. Y. Cents.	Lond'n Pence.	N. Y. Cents.
January...	27.30	59.30	27.42	59.36	26.29	56.77
February..	27.49	59 76	27.44	59.42	25.89	56.07
March.....	27.59	59.81	27.48	59.64	25.47	54.90
April.....	27.41	59.59	27.65	60.10	25.95	56.02
May.....	27.56	59.96	28.15	61.23	26.31	56.98
June.....	27.81	60.42	27.77	60.43	27.09	58.61
July.....	28.23	61.25	27.71	60 26	27.32	59.06
August....	28.13	61.14	27.62	60.00	27 48	59.54
September	28.85	62.63	27.15	58.89	28.05	60.68
October ..	29.58	63.83	26.70	57.98	27.90	60.42
November	29.66	64.04	27 02	58.67	27.93	60.60
December.	29.68	64.14	27.21	58.99	27.45	59.42
Year....	28.17	61.41	27.44	59.58	26.76	58.20

The New York prices are per fine ounce; the London quotation is per standard ounce, .925 fine.

Average Prices of Metals per lb., New York.

Month.	COPPER.		TIN.		LEAD.		SPELTER.	
	1900.	1899.	1900.	1899.	1900.	1899.	1900.	1899.
Jan.....	15.58	14.26	27.07	22.48	4.68	4.18	4.65	5.34
Feb.....	15.78	17.02	30.58	24.20	4.675	4.49	4.64	6.28
March...	16.29	16.35	32.90	23.82	4.675	4.37	4.60	6.31
April....	16.76	17.13	30.90	24.98	4.675	4.31	4.71	6.67
May.....	16.34	17.20	29.37	25.76	4.181	4.44	4.53	6.88
June.....	15.75	16.89	30.50	25.85	3.901	4.43	4.29	5.98
July.....	15.97	17.10	33.10	29.63	4.030	4.52	4.28	5.82
August..	16.35	17.42	31.28	31.53	4.250	4.57	4.17	5.65
Sept.....	16.44	17.34	29.42	32 74	4.350	4.58	4.11	5.50
October..	16.37	16.94	28.54	31.99	4.350	4.575	4.15	5.32
Nov.....	16.40	16.49	28.25	28.51	4.350	4.575	4.29	4.64
Dec.....	16.31	15.85	26.94	25.88	4.350	4.64	4.25	4.66
Year.....	16.19	16.67	29.90	25.12	4.73	4.47	4.39	5.75

The prices given in the table for copper are the averages for electrolytic copper; this is the case for both 1899 and 1900. The average price for Lake copper for the year 1899 was 17.61c. For January, 1900, the average price of Lake copper was 16.33c.; for February, 16.08c.; for March, 16.55c.; for April, 16.94c.; for May, 16.55c.; for June, 16c.; for July, 16.16c.; for August, 16.58c.; for September, 16.69c.; for October, 16.64c.; for November, 16.80c.; for December, 16.88c.; for the year 1900, 16.52c.

Prices of Foreign Coins.

	Bid.	Asked
Mexican dollars	$ 49⅝	$ .51
Peruvian soles and Chilean pesos	.45¾	.46½
Victoria sovereigns	4.85	4.88
Twenty francs	3.84	3.88
Twenty marks	4.73	4.78
Spanish 25 pesetas	4.78	4.82

Financial Notes of the Week.

The matter of special interest this week is the resumption of gold exports, some $2,500,000 having been taken in New York for shipment to

Imports and Exports of Metals.

Port.	Week, Jan. 16.		Year 1901.	
	Expts.	Impts.	Expts.	Impts.
New York.				
(N. Y. Metal Exchange.)				
Aluminum.....long tons	3	.....	3	.....
Antimony ore... " "	.....	.....	.....	.....
" regulus.. " "	.....	16	.....	16
Chrome ore..... " "	.....	.....	.....	.....
Copper, fine..... " "	1,482	.....	4,277	435
" matte.. " "	43	.....	195	22
" ore..... " "	.....	.....	.....	2,850
" ash..... " "	.....	.....	.....	.....
Iron ore ..... " "	.....	.....	.....	.....
" pig, bar, rod " "	822	20	1,562	20
" pipe..... " "	548	.....	928	.....
" plates, sheets " "	41	.....	107	.....
Lead..... " "	2,013	90	4,190	2,515
" ore.. ..... " "	.....	.....	.....	.....
" dross..... " "	.....	.....	.....	.....
Manganese, ore. " "	.....	25	.....	.....
Metals, old, scrap " "	50	5	79	5
Composition... " "	460	.....	1,415	.....
Nails..... " "	115	.....	372	.....
Nickel ..... " "	.....	.....	82	.....
" ore, matte " "	.....	.....	.....	.....
Railr'd material. " "	27	80	1,610	80
Rails, old..... " "	.....	.....	.....	.....
Steel bars, plates " "	3,870	123	5,863	123
" rails..... " "	1,213	.....	3,909	.....
" wire..... " "	1.548	.....	2,246	.....
Tin ..... " "	.....	647	.....	657
" and black plates " "	.....	500	.....	1,662
" dross..... " "	.....	.....	.....	.....
Zinc..... " "	.....	50	.....	50
" dross..... " "	33	.....	91	.....
" ashes, skim " "	.....	.....	.....	.....
" ore..... " "	.....	.....	.....	.....
Baltimore.				
(Special Correspondence).				
Antimony.. .....long tons	.....	.....	.....	.....
Chrome ore..... " "	.....	.....	.....	.....
Copper, fine..... " "	606	482	771	482
Ferro-manganese " "	.....	.....	.....	.....
Iron pig, bar, etc. " "	126	1,251	126	1,279
" ore..... " "	.....	8,132	.....	17,089
" pyrites..... " "	.....	.....	.....	3,575
Manganese ore.. " "	.....	1,400	.....	1,750
Metals, old & Rails " "	.....	.....	.....	.....
Nails ..... " "	.....	.....	52	.....
Pipe, iron & steel " "	.....	.....	.....	.....
Silicon ..... " "	.....	.....	.....	.....
Spiegeleisen..... " "	.....	.....	.....	.....
Steel, bars, etc.. " "	1,492	.....	2,784	.....
" wire ..... " "	.....	.....	461	.....
" rails..... " "	2,926	.....	6,373	.....
Tin..... " "	.....	.....	.....	.....
" and blackplates " "	.....	.....	.....	50
Zinc..... " "	.....	.....	.....	.....
Philadelphia.				
(Week ending Jan. 12).				
Antimony. .....long tons	.....	.....	.....	.....
Chrome ore..... " "	.....	.....	.....	.....
Copper, fine..... " "	.....	.....	.....	.....
" ore..... " "	.....	.....	.....	.....
" pyrites.. " "	.....	.....	.....	.....
Iron, pig..... " "	.....	50	.....	387
" ore..... " "	.....	13,990	.....	13,990
" pyrites..... " "	.....	.....	.....	.....
Manganese ore.. " "	.....	.....	.....	.....
Spiegeleisen..... " "	.....	.....	.....	.....
Tin..... " "	.....	50	.....	50
" and black plates " "	.....	2	.....	2
Zinc..... " "	.....	.....	.....	.....
" ore..... " "	.....	1,000	.....	1,000

Total United States.

Articles.	Nov. 1900.		Year, 1900.	
	Expts.	Impts.	Expts.	Impts.
Antimony.. .....long tons	.....	391	11	1.721
" ore... " "	.....	163	.....	2,295
Copper, in all forms..... " "	9,508	10,205	148,341	72,160
Iron, pig & bar.. " "	32,701	3,800	267.624	66,312
" ore..... " "	4.537	65,654	51,383	838,262
Iron & steel plates " "	6,312	295	46,363	5.021
Iron & steel rails " "	15,496	289	346.235	1,280
" " wire " "	5,532	261	71.186	1,740
Lead, in all forms " "	8,323	9,146	81,951	90,917
Manganese ore and oxide..... " "	.....	603	3	250,047
Nickel " & matte " "	153	.....	2,414	.....
Nails, cut..... " "	968	.....	10,117	.....
" wire..... " "	1,436	.....	25,663	.....
Quicksilver..... " "	19	.....	318	.....
Steel, billets, rods, etc..... " "	37,298	2,321	173,258	31,267
Tin..... " "	31	1,589	472	28,005
" & black plates " "	59	2,087	601	55,886
Zinc..... " "	1,249	8	19,719	922
" ore..... " "	3,197	.....	34,799	

Import Duties on Metals.

The duties on metals under the present tariff law are as follows: Antimony, metal or regulus, ¾c. a lb. Lead, 1¼c. a lb. on lead in ores; 2½c. per lb. on pigs, bars, etc.; 2½c. on sheet, pipe and manufactured forms. Nickel, 6c. per lb. Quicksilver, 7c. per lb. Spelter or zinc, 1½c. per lb. on pigs and bars, 2c. on sheets, etc. Copper, tin and platinum are free of duty.

London or Paris. The high rates of interest and the special demand for money, coupled with large sales of securities to New York buyers, are the causes for this movement, which may reach a considerable amount.

The silver market has continued very dull and quiet. The India Council is buying moderate amounts daily, while outside demand is limited. Dear money in London continues to keep spot price below future bids.

The statement of the United States Treasury on Wednesday, January 16th, shows balances in excess of outstanding certificates, as below:

	Jan. 15.	Jan. 16.	Changes.
Gold	$72,763,271	$82,095,360	I. $10,332,089
Silver	7 342 699	13,646,190	I. 6,303,491
Legal tenders	12,687,864	12,999,753	I. 311,889
Treas. notes, etc.	190.405	151,046	D. 39,359
Totals	$92,984,239	$108,892,349	I. $16,908,110

Treasury deposits with national banks amounted to $98,353,898, showing a decrease of $810,465 as compared with the previous day.

The statement of the New York banks—including the 66 banks represented in the Clearing House for the week ending January 12th, gives the following totals, comparison being made with the corresponding week in 1900 and 1899:

	1899.	1900.	1901.
Loans and discounts	$716,846,000	$676,238,100	$808,032,400
Deposits	835,805,700	749,257,400	885,336,200
Circulation	15,608,100	16,316,400	30,970,900
Reserve:			
Specie	173,184,600	145,266,100	172,961,500
Legal tenders	59,029,900	58,763,100	70,574,600
Total reserve	$237,214,500	$204,029,200	$243,536,100
Legal requirements	208,951,425	187,321,850	221,334,050
Balance, surplus	$28,263,075	$16,707,350	$22,202,050

Changes for the week, this year, were increases of $4,042,800 in loans and discounts, $14,386,100 in deposits, $8,133,700 in specie, $3,514,800 in legal tenders and $8,051,975 in surplus reserve; a decrease of $11,600 in circulation.

The following table shows the specie holdings of the leading banks of the world at the latest dates covered by their reports. The amounts are reduced to dollars, and comparison is made with the holdings at the corresponding date last year:

	1900.		1901.	
Banks.	Gold.	Silver.	Gold.	Silver.
N.Y. Ass'd	$146,266,100	.....	$172,961,500	.....
England	166,788,555	.....	145,688,690	.....
France	375,635,950	$228,853,960	467,671,560	$219,446,460
Germany	128,015,000	65,945,000	125,565,000	64,685,000
Spain	68,000,000	72,830,000	70,005,000	81,865,000
Neth'l'ds	18,850,000	29,770,000	21,515,000	27,970,000
Belgium	15,095,000	7,550,000	15,135,000	7,570,000
Italy	77,315,000	7,505,000	77 640,000	9,265,000
Russia	428,650,000	27,575,000	369,315,000	32,020,000

The returns of the Associated Banks of New York are of date of January 12th, and the others are of date January 11th, as reported by the "Commercial and Financial Chronicle" cable. The New York banks do not report silver separately, but the specie carried is chiefly gold coin. The Bank of England reports gold only.

Exports of merchandise from the United States in December were valued at $145,994,606, being $22,726,573 more than in December, 1899. The amount in 1900 was the largest ever reported in one month, with the single exception of October, 1900. For the full year the statement of the Bureau of Statistics of the Treasury Department is as follows:

	1899.	1900.
Exports	$1,275,467,971	$1,478,050,854
Imports	798,967,410	829,052,116
Excess, exports	$476,500,561	$648,998,738
Add excess of exports, silver		26,461,170
Total		$675,459,908
Deduct excess of imports, gold		12,603,402
Net apparent balance		$662,856,506

The statement of the gold and silver movement in detail will be found in the usual place, at the head of this column.

Indian exchange continues very firm, Council bills being taken at 16.13d. per rupee in London. The purchases of silver for Indian account still continue.

Shipments of silver from London to the East for the year up to January 3d, 1901, are reported by Messrs. Pixley & Abell's circular as follows:

	1899.	1900.	Changes.
India	£5,260,025	£7,791,239	I. £2,531,214
China	1,423,840	2,312,236	I. 888,396
The Straits	286,905	806,016	I. 519,111
Totals	£6,970,770	£10,909,491	I. £3,938,721

Arrivals for the week, this year, were £231,000 in bar silver from New York, £24,000 from the West Indies, £4,000 from Chile and £3,000 from Australia; total, £262,000. Shipments were £218,000 in bar silver to Bombay and £57,200 to Hong Kong; total, £275,200.

Other Metals.

Daily Prices of Metals in New York.

1901	Sterling Exchange.	Silver. Fine oz. Cts.	Silver. London. Pence.	Copper. Lake, cts. ₩ lb.	Copper. Electrolytic ₩ lb.	Copper. London, £ ₩ ton.	Tin, cts. ₩ lb.	Lead, cts. ₩ lb.	Spelter. N. Y. cts. ₩ lb.	Spelter. St. L. cts. ₩ lb.
January.										
12	4.87¼	63½	29¼	16¾	16¼	....	26¼	4.32½@4.37½	4.15	3.95
14	4.87¼	63½	29¼	16¾	16¼	71½	26¼	4.32½@4.37½	4.15	3.95
15	4.87¼	63¼	29⅛	16¾	16¼	71⅞	26¼	4.32½@4.37½	4.15	3.95
16	4.87	63⅝	29 3/16	16¾	16¼	71½	26½	4.32½@4.37½	4.15	3.95
17	4.87	63⅝	29 3/16	16¾	16¼	71¾	26½	4.32½@4.37½	4.15	3.95
18	4.87	63	29 1/16	16¾	16¼	71⅜	26½	4.31½@4.37½	4.15	3.95

London quotations are per long ton (2,240 lbs.) standard copper which is now the equivalent of the former g. m. b's. The New York quotations for electrolytic copper are for cakes, ingots or wirebars; the price of electrolytic cathodes is usually 0.25c. lower than these figures.

Copper.—The market is dull and we hear of little business. Prices have changed but little, as no pressure to sell has developed. Manufacturers generally are not well supplied, and a more active market is expected at an early date. We quote Lake copper at 16¾; electrolytic in cakes, wirebars and ingots at 16¼; in cathodes at 16c.; casting copper at 16⅛c.

The market for standard copper in London fluctuated very little. It closed last week at £71 17s. 6d. for spot, £72 10s. for three months, and opened on Monday at £71 12s. 9d. and £72 7s. 6d. respectively. On Tuesday it advanced 3s. 9d. which were lost again on Wednesday. On Thursday it was £71 5s. for spot, £71 18s. 9d. for three months, and the closing quotations are cabled as £71 7s. 6d. for spot, £72 for three months.

Statistics for the first half of January show a decrease of 100 tons. Refined and manufactured sorts we quote: English tough, £75@£75 10s.; best selected, £78 10s.@£79; strong sheets, £85@£85 10s.; India sheets, £82@£82 10s.; yellow metal, 6⅞@7d.

Copper production, as reported by Mr. John Stanton, who acts as statistician for the companies, was as follows for December and the year, stated in long tons (2,240 lbs.) of fine copper:

	December.		Year.	
Production.	1899.	1900.	1899	1900.
U. S., reporting mines	20,388	18,724	230,606	228,087
U. S., outside sources,	3,400	3,400	31,400	40,800
Total, U. S.	23,788	22,124	262,006	268,887
Europe reporting mines	7,360	8,483	89,240	90,331
Totals	30,148	30,607	351,246	359,218
Exports, U. S.	15,550	11,223	118,914	159,564

United States copper production in December showed—somewhat unexpectedly—a decrease of 1,664 tons, or 7%, from December, 1899. For the year there was an increase of 6,881 tons, or 2.6% only; the reporting mines showing a decrease of 2,519 tons, or 1.1%, while there was an increase of 9,400 tons, or 29.9%, in the copper from the outside sources—the newer mines and the smelters. The foreign reporting mines showed an increase of 1,091 tons, or 1.2%, in 1900. There was an extraordinary increase in exports from the United States, the total gain being 40,650 tons, or 34.2%; while the exports in 1900 were 59.3% of the total production.

Tin.—The market this week has been dull and uninteresting. London cables have been slightly higher, but our market was not much affected thereby. At the close we quote spot and futures at 26¼@26½c.

The London market, which closed last week at £119 10s. for both spot and three months, opened at £118 7s. 6d. for spot, £118 for three months. On Wednesday it was £119 5s. for spot, £118 10s. for three months, and on Thursday 7s. 6d. higher. It closes at £119 12s. 6d. for spot, £118 15s. for three months.

Lead.—There is no change in the market. A fair business is reported at last prices, 4.17½@4.32½c. St. Louis, 4.32½@4.37½c. New York.

The foreign market is somewhat weaker, Spanish lead being quoted at £16 1s. 3d., English lead 2s. 6d. higher.

Spelter.—The market remains dull. Consumers are pursuing a hand-to-mouth policy, but producers are not pressing sales. Prices are unchanged at 3.95c. St. Louis, 4.15c. New York.

Our cables report the foreign market somewhat lower, good ordinaries being quoted at £18 15s., specials at £19.

Silesian Spelter Market.—The circular of Paul Speier, of Breslau, for December 31st, reports the price of zinc at the close of the year at 17.50 marks per 50 kgs. At the opening of the year the quotation was 20 m. The average for the year 1900 was 18.87 m. per 50 kg., which compares with 23.25 m. in 1899; 18.75 m. in 1898, and 15.87 m. in 1897. The average for 1900 is equivalent to 4.07½c. per pound. The large shipments from America affected the market unfavorably. For the 11 months ending November 30th imports into Germany included 20,705 metric tons spelter and 30,989 tons zinc ore. Exports of spelter for the 11 months were: Austria-Hungary, 6,969 metric tons; Great Britain, 6,640 tons; Russia, 3,901 tons; France, 1,222 tons; Holland, 1,021 tons; Italy, 951 tons; Japan, 863 tons; Sweden, 502 tons. The total exports showed an increase of 2,200 tons, or 10.6%, over 1899.

Antimony.—We quote Cookson's at 10c.; Hallett's at 9⅛c.; U. S. Star 9¼c.

Nickel.—The price continues firm at 50@60c. per lb., according to size and terms of order.

Platinum.—Consumption continues good and prices are strong. For ingot platinum in large quantities $18.20 per Troy oz. is quoted in New York. In London a recent quotation gives 75s. per ounce, unmanufactured, and 77s. 6d.@80s. for crucibles, etc. This is very nearly on a parity with New York prices.

Chemical ware (crucibles and dishes), best hammered metal from store in large quantities, is worth 72c. per gram.

Quicksilver.—The New York quotation continues unchanged at $51 per flask for large lots, with $52.50@$54 asked for small quantities. San Francisco prices are $48@$48.50 on local deliveries, and $43.50@$44 on export orders. The London price is £9 2s. 6d. per flask, with the same price named from second hands.

Quicksilver shipments from San Francisco by water in the year 1900 are reported as follows: Siberia, 7 flasks; China, 1,000; New Zealand, 5; Australia, 100; Central America, 1,416; Mexico, 4,683; British Columbia, 13; Washington, 5; New York, 70; total, 7,299 flasks. In 1889 the total was 10,075 flasks, showing a decrease of 2,776 flasks, or 27.6%, last year.

Minor Metals and Alloys.—Wholesale prices, f. o. b. works, are as follows:

Aluminum.	Per lb.		Per lb.
No. 1, 99% ingots	33@37c.	Ferro-Titanium (20%)	$1.00
No. 2, 90% ingots	31@34c.	Ferro-Tungsten (37%)	32c.
Rolled sheets	42c. up	Magnesium	$2.75@$3
Alum.-bronze	20@23c.	Manganese (over 99%)	$1.05
Nickel-alum	33@39c.	Mangan'e Cop. (20% Mn)	32c.
Bismuth	$2.25	Mangan'e Cop. (30% Mn)	38c.
Chromium (over 99%)	1.00	Molybdenum (Best)	$1.45
Copper, red oxide	50c.	Phosphorus	50c
Ferro-Molyb'um (50%)	$1.00	American	70c
Ferro-Titanium (10%)	90c.	Tungsten (Best)	86c.

Variations in prices depend chiefly on the size of the order.

LATE NEWS

(From Our Special Correspondent.)

London, January 8th.—The London mining market has been chiefly occupied this week with discussions about the London & Globe Finance Corporation's failure, some details of which I gave in my last week's letter. After the market had got over the shock of the 18 failures on the Stock Exchange due to the Corporation not being able to pay its gambling debts, the question next arose: What is to be done with the Corporation? The Stock Exchange creditors naturally desire that the Corporation shall be reconstructed with an assessment all round on the shareholders, in order that they may be able eventually to get back some of the money owing to them. They have won the two financial daily papers to their side, and the shareholders are being told that they must submit to reconstruction or lose every penny of their investment. In the meantime the directors have not issued any statement of affairs, and nobody knows what the position of the corporation is. A meeting of shareholders is to be held in a few days, when the proposals of the directors, whatever they may be, will be sprung on them suddenly, and the chairman will be armed with proxies which he will have wheedled out of shareholders before they have heard the terms of the proposals. This is the usual way that things are done. It is true that one or two creditors and shareholders have presented petitions to the High Court for the compulsory winding up of the Corporation with an independent liquidator, and if the main body of shareholders supported such petitions they would show their wisdom. The influence of the Stock Exchange creditors with shareholders is, however, very great, for the shareholders do not understand that the creditors' advice is not disinterested, and it is quite likely that the Corporation will be reconstructed. The whole thing depends on whether Mr. Whitaker Wright can get sufficient proxies out of his poor shareholders. To say that shareholders will get nothing at all if they vote for compulsory liquidation is not a great recommendation to the integrity of the managers of the corporation, for it implies that the boasted assets do not exist, and that future profits after a reconstruction are to be made by a continuance of the same gambling that has suddenly brought the Corporation to ruin. After all, the shareholders deserve no sympathy, for if they will put their money in companies whose main business is really neither finance nor mining, they must take what comes.

CHEMICALS AND MINERALS.

(For further prices of chemicals, minerals, and rare elements, see page 104.)

New York. Jan. 18.

Heavy Chemicals.—Domestic makers have their soda ash well contracted for some time ahead, hence prices are firmly held. Next fire alkali has sold in a large way at quotations. Sal soda is quiet. Bleaching powder sold ex-dock at $1.87½ per 100 lbs., for Continental makes, while Liverpool prime brands are unchanged. A few more bleach contracts were booked. Chlorate of potash, domestic, is easier. Crystal permanganate of potash is weaker at 11@11½c. per lb.

We quote per 100 lbs. as follows: Domestic soda ash in bulk is worth 2¼c. per 100 lbs. less than quotations below.

Articles.	Domestic.		Foreign.
	F.o.b. Works.	In New York.	In New York.
Alkali, 58%.	80@82½	.....	85@87½
" 48%.	82½@85	.....	.....
Caustic Soda, high test....	$1.80@$1.85	.....	1.85@1.87½
powd., 60%.	.....	2.75	.....
70@74%.	.....	2.85	.....
98%.	.....	3 25	3.75@4.60
Sal Soda	50	60	65
"conc.	1.12½@1.75	.....	1.75
Bicarb. Soda..	1.06¼@1.12½	.....	1.37½@1.75
" " extra	3.25@3.50	.....	.....
Bleach Pdr., Eng. prime..	.....	.....	2.00@2.10
other br'nds.	.....	.....	1.90@1.95
Chl. Pot cryst	8.25@8.50		9.75@10.00
" powd.	8.50@8.75		9.75@10.00

Acids.—Contract deliveries attract most attention. New orders for sulphuric acid are being booked at quotations. Oxalic contracts were taken at $5.62½ per 100 lbs. Acetic makers are still at odds, but as yet the market quotations show no material change.

Blue vitriol is well sold up for export.

Quotations as below are for large lots delivered in New York and vicinity, per 100 lbs. unless otherwise specified.

Acetic, No.8	$1.62½	Nitric, 36°	$3.87½
Blue Vitriol	5.00@5.25	Nitric, 38°	4.12½
Aqua Fortis, 36°	3 62½	Nitric, 40°	4.37
Aqua Fortis, 38°	3 87½	Nitric, 42°	4.75
Aqua Fortis, 40°	4.12½	Oxalic	5.62½@6.00
Aqua Fortis, 42°	4.50	Sulphuric, 66°	1.20
Muriatic, 18°.	1.20	Sulphuric, 60°	1.05
Muriatic, 20°.	1.35	" bulk 50° ton	14.00
Muriatic 22°	1.50		

Brimstone.—Imports at New York this week were 3,020 tons, making 3,820 tons so far this year. On spot best unmixed seconds sold at $22 @$22.50 per ton, and for shipment at $21@$21.25. Best thirds are quoted $2 per ton less than seconds.

Pyrites.—This week 3,193 tons Spanish iron pyrites were imported at New York. Business continues good, and prices are pretty well maintained. We quote as follows: Mineral City, Va., lump ore (basis 45%), $4.90 per long ton and fines $4.50. Charlemont, Mass., lump, $5.50 and fines $5. Spanish pyrites, 12@14c., as to percentage of sulphur contents, delivered ex-ship New York and other Atlantic ports. Spanish pyrites contain from 46@51½% of sulphur; American from 42@44%.

Fertilizing Chemicals.—Buying of blood and tankage remains good, though Western packers are not anxious sellers, owing to limited stocks, consequently prices are firm. Calcutta bonemeal shows a large business. Quotations are: Sulphate of ammonia, gas liquor, $2.72½@$2.80 per 100 lbs.; blood, $2.15 per unit, f. o. b. Chicago, and $2.30 for New York sort; tankage, $1.95@$2 and 10c. per unit, f. o. b. Chicago; Calcutta bonemeal, $24 for best grades and $19.50 for ordinary grades; domestic steamed ground bone, $19@ $19.50 per ton.

Potash salts are quoted as follows: Muriate of potash, 80%, $1.83@$1.86 per 100 lbs.; double manure salt, 90@93%, $1.05@$1.06 per 100 lbs.; manure salt, 90@93%, $2.05½@$2.08½ per 100 lbs.; manure salt, 20%, 64@66c.; Kainit, bulk, $9.05@ $9.30 per short ton, and Keiseret, $7.25@$7.50 per ton.

Nitrate of Soda.—The market is quiet, and sales are reported at $1.82½@$1.85 per 100 lbs., according to position.

Concerning the European situation it is noteworthy that on January 1st, this year, the stocks in the United Kingdom show an increase of fully 5,000 long tons over last year, while on the Continent of Europe they are less by about 20,000 tons. The visible supply, including these stocks and the cargoes afloat, aggregate 793,640 long tons, showing a large increase over January 1st, 1900. Consumption has fallen off somewhat, especially in some of the European countries, but prices are better maintained than for some years past. The Santa Catalina Nitrate Company, Limited, paid a 3% interim dividend on January 10th from the past year's profits.

Messrs. Jackson Brothers, of Valparaiso, Chile, advise us under date of December 1st that there has been very little disposition to operate in 95% nitrate of soda during the past fortnight, although for the refined quality there has been a fair demand for the United States and transactions have been effected at prices ranging from 5s. 9¼d.@5s. 10d. alongside. The difference in price between ordinary and refined nitrate for the early months of 1901 again points to being 3@4d. per qtl. Ordinary nitrate for prompt delivery with quick shipment is scarce and 5s. 8d. alongside has been paid, with transactions for late December and January deliveries at 5s. 7d. alongside. We quote 95% prompt, 5s. 7½d. late December 5s. 4 d., January 5s. 6½d., January-February 5s. 6d., and refined, 5s. 10d. December-February, 5s. 9½d. March-June, all ordinary terms, sellers. The price of 5s. 7d. with an all-round freight of 28s. 9d. stands in 7s. 7½d. per cwt. net cost and freight without purchasing commission, against European quotations of 7s. 6¾d. for December sailings. Reported sales for the fortnight are 428,800 qtls., and re-sales, 76,000 qtls.

Phosphate.—In the hard rock region of Florida not more than 39 plants are operating, owing to the moderate demand. In Tennessee miners look for better prices. Some good rock has been discovered on Mountain Creek, in Warren County, Tenn. South Carolina miners have larger stocks than last year, and it is estimated that nearly 68,000 tons are on hand.

Phosphates.	Per Ton F. o. b.	C i. f. Un'd Kingdom or European Ports.	
		Unit.	Long ton.
*Fla. hard rock (77@80%)	$7.50@8.00	8½@8¾d	$12.68@13.07
*Fla. land pebble (68@73%)	4.35	7@7¼d	9.00@10.15
*Fla. Peace River. 58@63%	3.00@3.50	6½@7¼d	7.80@8.70
†Tenn. rock 78%, export.	2.85@2.90	7¼@7½d	11.31@11.70
†Tenn.....78% domestic.	2.70@2 85	.....	.....
†Tenn.....75% "	2.50@2.75	.....	.....
†Tenn.....72% "	2.25@2.50	.....	.....
‡So. Car. rock, crude....	3.75@4.00	.....	.....
§So. Car. rock, dried.....	4.50	6½d	7.80
Algerian, rock...(63@70%)	.....	7¼@7¾d	9.72@10.3
Algerian, rock...(58@63%)	.....	7@7½d	8.00@9.0

* Fernandina. † Mt. Pleasant. ‡ At mines. § On vessels, Ashley River.

Liverpool. Jan. 2.

(Special Report of Joseph P. Brunner & Co.)

The new year has opened with the usual holiday feeling and it will take a few days yet before the market settles down to business again. There is no change in the position as regards prices since our last advice. Soda ash is strong in tone, and while prices vary according to market, the range for tierces may be called about as follows: Leblanc ash, 48%, £5 15s.@£6; 58%, £6 2s. 6d.@£6 7s. 6d. per ton net cash. Ammonia ash, 48%, £4 10s.@£4 15s.; 58%, £4 15s.@£5 per ton net cash. Bags are 5s. per ton under price for tierces. Soda crystals are firm at £3 7s. 6d. @£3 10s. per ton, less 5% for barrels or 7s. less for bags, with special quotations for a few favored markets. Caustic soda is firmly held by makers and quotations are as follows: 60%, £9 5s.; 70%, £10 5s.; 74%, £10 15s.; 76%, £11@£11 5s. per ton, net cash.

Bleaching powder is quoted at £6 15s.@£7 5s. per ton, net cash for hardwood packages, as to market, but there are not many inquirers about just at the moment.

Chlorate of potash is steady at 3¾d. per lb. net cash. The principal manufacturers have decided to bar sales on this market in future for export to the United States.

Bicarb. soda is in moderate request at £6 15s. per ton, less 2½% for the finest quality in 1 cwt. kegs, with usual allowances for larger packages, also special terms for a few favored markets.

Sulphate of ammonia is maintained at £11 2s. 6d.@£11 5s. per ton, less 2½% for good gray 24@ 25% in double bags f. o. b. here for spot delivery.

Nitrate of soda is unchanged and spot quotasales are reported at $1.85 per 100 lbs. in all positions.

MINING STOCKS.

Complete quotations will be found on pages 100 and 10 of mining stocks listed and dealt in at:

Boston.	Philadelphia.	Montreal.
Colo. Springs.	Salt Lake.	London.
Denver.	San Francisco.	Mexico.
New York.	Spokane.	Paris.
	Toronto.	

New York. Jan. 18.

With few exceptions the market is weaker, while trading is mostly professional. Amalgamated opened at last week's closing price, but did not hold it, as the volume of business fell off; at the close sales were made down to $90. Anaconda was almost featureless, and prices have dropped below last week's range. British Columbia Copper was weak, selling off 2¾ points to $20, owing, it is said, to less support by insiders. As the company is increasing the productive capacity of its property the officers are paying little attention to the curb stock market. Union, of North Carolina, reappeared with a little more support, and sold higher on curb.

American Smelting and Refining shares are stronger, in anticipation of an early agreement with the Guggenheims; the common shares sold up to $65½—the highest on record, while the preferred stock nearly touched par.

Some dealing is noted in Alice, of Montana, which had been inactive for several weeks.

Standard Consolidated, of California, shows an improved demand and a higher price, some sales being made at $4.30, or 40c. more than last week. Stockholders look for another dividend soon. Brunswick held its gain at 28c., but business was small.

In the Colorado gold list the dividend-payers are firm and higher. Portland declared a 6c. quarterly dividend this month, strengthening the stock to $3.20. Elkton held firm on sales at $1.85, and Isabella gained 6c. at 75c. Small Hopes, of Leadville, was higher at 80c.

The Comstock shares are dormant. Consolidated California and Virginia brought $1.95@ $1.90, much less than a week ago, and Ophir 81c., or 7c. less.

Auction sales were 2 shares New Jersey Zinc Company at $202, and 100 shares Interstate Oil Company at $4¾ per share.

The report of the Cambria Steel Company for the year ending October 31st, 1900, shows $3,943,-258 gross profits for the year, from all sources, from which is deducted rental, $338,720; inventory guarantee account, $481,151, covering depreciation in stock of raw material on hand; a total of $850,871, leaving the net results of the year's operations $3,092,387. There has been paid in dividends $2,560,000. There was carried to surplus account $532,387, which amount, added to former surplus, makes that account at the end of the fiscal year $1,735,517. There was expended during the year in new property and plant $2,441,417. A dividend of 50c. per share has been declared, payable February 15th.

The first annual report of the American Cement Company was submitted to the stockholders at the recent annual meeting at Camden, N. J., the profit and loss account covering the period from September 1st, 1899, to December 31st, 1900. It was: Receipts, earnings cement company up to November 30th, $295,238; earnings Leslie & Trikle up to November 30th, $50,345; total, $347,583; interest and bond adjustment, $3,522; total, $351,106. Expenditures, general expenses, $12,275; Moss Jordan Works and Virginia Land expenses, $732; one-fifth organization expenses, $3,862; depreciation furniture, fixtures, etc., $77; total, $16,948; interest bonds paid and accrued to December 31st, $60,062; sinking fund, $45,000; dividends paid January and July, $140,000; reserved for dividend January 15th, 1901, $80,000; balance, $7,005; total, $224,157.

Boston. Jan. 17.

(From Our Special Correspondent.)

While the market for railroad and industrial stocks has been active, mining stocks have been rather dull. Two or three exceptions appeared in the coppers, the most notable one being Copper Range, which went up to $39 on strong buying. Old Dominion was also strong, selling at $31½, but dropping to $30 later. There has been some spasmodic buying of Boston & Montana, but on the whole it was weak at $320. This company's dividend announcement was made on Monday. The payment is $10 a share, against $15 three months ago. The announcement had very little effect.

Dominion Coal sold at $36½@$37, with few transactions.

The Dominion Iron and Steel Company proposes to make an issue of 50,000 shares of preferred stock, which will be offered at par, $100 per share. The stock is 7% cumulative and is subject to be called by the company at $115 per share, or may be exchanged for common stock at any time, at the option of the holder. With the issue of this stock the capitalization of the Dominion Iron and Steel Company will stand as follows: First mortgage 5% bonds, $8,-000,000; 7% preferred stock, $5,000,000; common stock, $15,000,000. The new issue of preferred stock has been underwritten.

The latest flotation is the Arimex Consolidated Copper Company, with $5,000,000 capital stock, which is being extensively advertised in the papers. This company owns no property directly, but holds large blocks of stock in several companies—the Oxide and Table Mountain in Arizona and the Angang in Mexico—which the public has not bought with any enthusiasm, to say the least. The Arimex Company offers 60,-000 shares of its 200,000 at par—$25. Why the public should buy in this form stocks which nobody wanted to take directly does not appear. The advertisements have a characteristic boom flavor, however, and may draw some purchasers. There is some speculation as to whether this concern will repeat a recent performance, and issue a lot of extra shares provided the issue is over-subscribed. That also was a characteristic performance, about which honest men have only one opinion.

Salt Lake City. Jan. 12.

(From Our Special Correspondent.)

This has been decidedly a sensational week on the Mining Stock Exchange. It closed yesterday with a record of sales amounting to 213,112 shares, representing $164,039, or nearly three times the business of the week previous.

The week was the most exciting in the history of the board for the past two years, and Lower Mammoth is largely responsible for it. Opening Monday morning, this stock was selling at $1.45¾, advancing to $1.62. Later in the day it rose to $1.80. On Wednesday it reached $3.34, and on Thursday $4.05 a share. Since then it has held up and sold at from $3.75 to $3.90, with $3.80 as the top figure in Saturday's call. This advance is unwarranted, although an ore body with an 8-ft. face has been uncovered on the 800-ft. level. This strike is made on the Hungarian—a property lying between the Ajax south lines and the Lower Mammoth north lines, and owned jointly by the two named properties, the former owning the north half of the Hungarian and the latter the south half. This fact is not generally known, but accounts for Ajax following in the wake of Lower Mammoth as a favorite, causing it to close on Saturday a clean 25c. higher than it opened Monday.

Consolidated Mercur, largely on account of the failure on the part of its management to make good its claim that stock would be listed on the Boston Exchange, as well as the absence of anything definite concerning its present expected dividend, slumped materially and has hung between $3 and $3.75 all week.

Daly trotted up from $1.50 to $2, while Daly-West, having commenced the year right with a 30c. dividend, slid up from $27.75 to $30.

Sunshine, on account of possible litigation, the natural sequence to a mining sale, dropped from 30c. to 27½c., though the best informed say there will be no hitch in the sale.

San Francisco. Jan. 12,

(From Our Special Correspondent.)

The market has been dull and much weaker, prices falling off largely as compared with a week ago. Consolidated California sold down to $1.95, or nearly $1 less than the highest point reached on the recent jump. Ophir sold at 85c.; Gould & Curry at 60c. Standard Consolidated was $4.10 bid, with no sales.

The annual meeting of the members of the Pacific Stock Exchange was held January 9th. The following officers were elected to serve during the ensuing year: President, I. Herzberg; vice-president, P. J. Cadogan; secretary, William J. Donovan; treasurer, Max Goldman; chairman, Jno. B. Bourne; executive committee, W. E. Miles, William Brannan and William S. Wattles.

The annual meeting of the members of the San Francisco Stock and Exchange Board will be held on Monday next, January 14th. The following regular ticket has been nominated, and in all probability will be elected without opposition: For president, A. J. McDonnell; vice-president, A. B. Ruggles; secretary, Fred W. Hadley; treasurer, Geo. T. Marye, Jr.; chairman, O. V. Walker.

The Oil Exchange was active and prices strong. Hanford sold up to $121 and Oil City at $34. Two new favorites showed up this week, Peerless selling largely around $8 and Wolverine at $1.80. Interest seems to be increasing steadily in this exchange.

London. Jan. 1.

(From Our Special Correspondent.)

The mining market was startled on Friday last by the announcement that Mr. Whitaker Wright's London & Globe Finance Corporation had collapsed owing to its inability to pay for its stock exchange transactions. For some time now the bears have been attacking all the shares of the various Whitaker Wright companies and the London & Globe had to counteract their doings by buying wherever possible. At the fortnightly settlement just after Christmas the corporation found itself unable to borrow the money to pay for its purchases, and sixteen firms of brokers acting for it failed simultaneously. All the shares in the group slumped badly and there was general consternation for a time. The London & Globe is now proposing to liquidate, and no doubt Mr. Whitaker Wright will try to induce shareholders to consent to a reconstruction involving a further subscription of 5s. per share. The effect of the collapse on the market has not been very great and people are already recovering from the shock.

The South African section has again been very much depressed by the continued fighting and the renewed activity of the Boers in capturing and discomfiting parties of the English army is extremely disconcerting to those who hoped to see the mining industry of that part of the world on its legs again. Most of the speculation is now centered on the West African or Ashanti section, where many new companies continue to make their appearance. The claims made with regard to auriferous deposits in this district appear to be even more shadowy than usual. The country in which the properties are situated is a direct contrast to the country where the last boom was located, viz., Alaska, and the climate seems to be as bad if not worse than Venezuela and other unhealthy parts of South America.

Last week I mentioned that quite a number of new mining companies had been offered to the public, owing to the desire of the promoters to launch them before the new company law comes into effect with the beginning of 1901. Since then some others have been issued, notably one to operate in West Africa, and another, one of Mr. Horatio Bottomley's. During the last few days of the year there was a tremendous rush at Somerset House to register new companies. As a rule the average number of new companies registered every day is about fifteen, but at present the average has been nearer 150. The requirements of the new law are somewhat severe, and it is not to be wondered at that promoters should fight shy of it.

During the past few months I have had to record the troubles of quite a number of recently promoted copper companies. Another company of the sort that is in difficulties is the Ray Copper Mines, of Arizona, which was floated in London in the summer of 1899 by Mr. Alexander Hill. It was soon found that the ore was of lower grade than was originally supposed and in consequence it became necessary to smelt it on the spot instead of shipping it to a smelter. To provide the necessary money for this £100,000 in debentures was raised. With all this money and with 750,000 tons of ore in sight, averaging 4½% of copper, it might be expected that things would go on all right. But the directors now report to the shareholders that the plant which has been directed does not work, that they reqiure further capital and that they cannot pay debenture interest. Negotiations are now pending for raising further money, but details are not as yet available. It also appears that £18,000 was lent by a metal merchant in New York and that the directors desire him to take debentures to this amount, a proposition which he is not inclined to accept. How the mine is to be put on its feet is not quite clear, but in the meantime it would be advisable to have an independent estimate of the nature and extent of the ore.

Paris. Jan. 5.

(From Our Special Correspondent.)

The stock market is generally quiet and business is light. This is generally the case at this time, when the effect of the December settlements and the New Year's holiday are felt. Most people are waiting and uncertain as to the future, which is now unsettled by several influences. Moreover, the collapse in the London market has had a certain reflex influence upon ours, though few here are directly affected by the London & Globe failure.

The unsettled condition of South African affairs and the possible results of the China business alike weigh heavily on the market. Our financiers are also inclined to think that we may be required to finance our Russian allies to a large extent during 1901; and some of them do not like that prospect.

By order of the Syndicate of Agents de Change a new system of quoting prices of silver went into effect January 1st. The custom always has been to quote the price in thousandths of the official or coinage value, which is 218.89 fr. per kilogram fine silver, or 200 fr. for standard silver, .900 fine. Hereafter the price will be quoted simply in francs per kilogram. Thus, where the old quotation would have been for fine silver, say 505 discount, it would be now simply 108.35 fr. per kilogram, fine. The new method is much more convenient than the old.

The scheme for the enlargement of the Paris Bourse, accepted by the Syndicate of Agents de Change, has been approved by a committee of the municipality. The cost of the works, estimated at 4,000,000 fr., would be borne entirely by the Association of Agents de Change, which would also pay a rental of 250,000 fr. a year on a lease of 60 years, at the end of which the Bourse building, which belongs to the municipality, would revert to that body without any compensation for the extensions. The Agents de Change reserve the right to cancel the lease should any law be passed that would have the effect of putting an end to their monopoly in the negotiation of public securities.

The movement of gold and silver in France for the 11 months ending November 30th is reported by the Ministry of Commerce as below:

	Imports.	Exports.		Excess.
Gold:				
1900	Fr.396,618,285	Fr.103,906,252	Imp.	Fr.192,712,033
1899	292,882,535	145,206,351	Imp.	147,676,184
Silver:				
1900	133,231,473	186,266,078	Exp.	53,034,605
1899	172,261,779	209,917,684	Exp.	37,655,905

The imports of copper and nickel coins, stated at their face or coin value, were 54,900fr. in 1900 and 71,100fr. in 1899; the exports were 305,100fr. in 1900 and 562,500fr. in 1899.

The depressing influence to which I am inclined to attach the greatest importance—though not everyone agrees with me—is the coal situation. All the industrial companies are feeling the decline in trade activity and are preparing as best they can to face declining prices and sharper competition. The weight upon them all is the high price of fuel. It appears that there is no present prospect of any important reduction in this, since a decline would involve a reduction in wages, and that in turn a general strike, which would stop the whole supply for a time. Neither the coal operators nor manufacturers want to face this, for it is by no means sure that a coal miners' strike may not be followed by a general upheaval of labor. The consequences no man can foresee. The industrial situation for the new year, in a word, depends on cheaper coal. How are we to get it? I do not see, nor does anyone else just yet.

Azote.

DIVIDENDS.

NAME OF COMPANY	Latest Dividend. Date.	Per share.	Total.	Total to date.
Altoona Coal & Coke.	Jan. 2	$0.30	$75,000	$75,000
†Amalgamated Copper	Jan. 28	1.50	1,125,000	9,000,000
Amalgamated, extra .	Jan. 28	.50	375,000	.....
Am. Bridge, pf.....	Jan. 24	2.62½	918,750	.....
†Am. Steel Hoop, pf...	Jan. 31	1 75	245,000	1 470,000
†Am. Tin Plate, com..	Feb. 1	2.00	560,000	560,000
†Am. Tin Plate, pf.....	Jan. 31	1.75	320,688	.....
†Boston & Mont. Cop.	Feb. 20	5.00	750,000	22,475,000
Boston & Mont ,extra.	Feb. 20	5.00	750,000	.....
†But'fly-Terrible, Colo	Jan. 28	.00½	6,250	6,250
California Oil & Gas .	Jan. 5	.50	100,000	100,000
Cambria Steel	Feb. 15	.50	160,000	1,760,000
*Consolidated, Colo...	Jan. 25	.01	10,000	140,000
Consolidation Coal....	Feb. 1	2 00	205,000	5,318,000
Diamond State Steel..	Jan. 22	4.00	60,000	160,000
Doctor-Jack Pot, Colo	Jan. 28	.01	29 000	29,000
*Empire State, Idaho.	Jan. 15	.30	29,554	702,241
Federal Steel, com ..	Feb. 20	5.00	2,324,215	4,067,377
†Federal Steel. pf. ..	Jan. 21	1.50	798,914	7,486,568
†FlatTopC.L.Ass'n,pf.	Feb. 1	1.00	37,141	1,987,127
*FlatT.C.L.Ass'n,com.	Feb. 1	1.00	37,141	315,639
*Gold Coin, Colo.....	Jan. 25	.03	30,000	630,000
*Golden Cycle, Colo...	Jan. 18	.05	10,000	388,500
Gray Eagle Oil, Cal...	Jan. 15	.60	50,000	170,000
*Homestake, S. Dak..	Jan. 25	.50	105,000	9,508,750
Julian Alaska.....	Jan. 1	.05	5,000	5,000
*Modoc, Colo	Jan. 15	.01	5,000	210,000
†Mont. Ore Purch.Mon	Jan. 21	1 00	80 000	1,840,000
Mont. Ore Purch., ex.	Jan. 21	2.00	160,000	.....
†National Salt, com...	Feb. 1	1.50	105,000	350,000
†National Salt, pf.	Feb. 1	1.75	87,500	612,500
†New Haven I. & S...	Jan. 21	.07½	7,500	102,500
Nugget, Colo.....	Jan. 19	.01	9,910	64,910
†Parrot, Mont ...	Jan. 28	1.50	344,775	4,738,600
†Pittsburg Coal pf....	Jan. 25	1.75	560,000	2,800,000
†Portland, Colo	Jan. 15	.06	180,000	3,487,000
Shawmut Oil	Feb. 1	.50	25,000	25,000
*Smuggler, Colo.....	Jan. 15	.03	30 000	1,760,000
§Stratton's Indep'end.	Jan 15	.12	120 000	2,835,353
†Susquehanna I. & S..	Jan. 14	.07½	22,500	537,500
†Tenn C. I. & R.R . pf	Feb. 1	2.00	4,960	248,000
†Texas & Pacific Coal.	Jan. 23	1.50	30,000	1,830,000
Union Z. & Lead, Kan.	Jan. 2	.01	5,000	20,000
†Vindicator Con.,Colo	Jan. 25	.02½	27,500	521,000

*Monthly. †Quarterly. §Interim.

ASSESSMENTS.

NAME OF COMPANY.	Location	No	Delinq.	Sale	Amt.
Belcher.	Nev..	67	Feb. 6	Feb. 27	.10
Ben Butler.....	Utah	7	Jan. 14	Feb. 5	.0 ½
Brunswick Con	Cal..	15	Dec. 26	Jan. 28	.3
Canton Placer	Cal..	1	Feb. 5	Feb. 25	.05
Centennial.....	Mich ...		Apr. 12		2.00
Central Mammoth....	Utah	1	Jan. 14	Feb. 5	.01
Confidence.....	Nev..	36	Jan. 30	Feb 21	.20
Con. Imperial	Nev..	46	Dec. 28	Jan. 23	.01
Ella Eldon...	S. D..	..	Feb. 1	.....	.00¼
Eureka Con. Drift....	Cal..	28	Jan 15	Feb. 5	.00½
Excelsior.....	Utah	...	Feb. 14	Mar.20	.00½
Fall Creek	Cal..	...	Jan. 24	.....	.10
Gonyon.....	Utah	.	Feb. 5	Feb. 25	.00¼
Gould & Curry	Nev..	93	Jan. 7	Jan. 28	.10
Justice.....	Nev..	70	Jan. 10	Jan. 31	.05
Lombard.....	Utah	...	Jan. 15	Feb. 1	.00½
Louise S..	Utah	...	Jan. 6	Feb. 5	.01
Mariposa Com'l & Mg.	Cal..	20	Feb. 11	Mar. 2	10.00
May Day.....	Cal	5	Jan. 8	Feb. 19	.05
Meteor.....	Utah	.	Jan 31	Mar. 7	.00¼
New Erie	Utah	4	Jan. 11	Jan. 28	.00¼
Occidental Con.....	Nev..	36	Jan. 31	Feb. 21	.05
Orleans.....	Cal..	10	Jan 19	Feb. 16	.03
R. G. W.....	Utah	...	Jan. 28	Feb. 16	.00½
Ruby Hill.....	Nev..	...	Jan. 28	.....	.01
Sailor Con.....	Cal .	.	Jan. 15	.....	.01
Sharp	Utah	2	Jan. 3	Jan. 23	.00¼
Silver Bow.....	Utah	...	Jan. 10	Jan. 30	.00¼
Silver King.....	Ariz.	22	Jan. 22	Feb. 19	.25
Skagit Cumberl'd Coal	Wa'h	8	Jan. 7	Feb. 8	.01½
Snow Flake..	Utah	18	Jan. 7	Jan. 28	.01
Trent.....	S. D..	5	Jan. 10	Jan. 31	.001½
Utah Con.....	Nev..	35	Feb. 1	Feb. 21	.05
West Argent	Utah	1	Jan. 23	Feb. 9	.02

ANNUAL MEETINGS.

Name of Co.	Locat'n.	Date.	Place of Meeting.
Alert..... ...	Colo .	Feb. 5	Colorado Springs,Col
Am. Steel & W..	U. S.....	Feb. 21	71 Broadway, N. Y.
Bingham C. & G.	Utah....	Jan. 30	Jersey City, N. J.
Brunswick Con..	Cal.....	Jan. 24	Grass Valley, Cal.
Cannelton Coal..	W. Va..	Feb. 1	115 Broadway, N. Y.
Dalton	Utah....	Jan. 28	Salt Lake City, Utah.
Daly.....	Utah....	Feb. 15	Salt Lake City, Utah.
*El Rey....	Utah ..	Feb. 4	Salt Lake City, Utah.
Gold Dollar.....	Colo. ..	Jan. 22	Colo. Springs, Colo.
*Jamison	Cal	Feb. 11	San Francisco, Cal.
Little Pittsburg .	Utah....	Feb. 8	Salt Lake City, Utah.
Mammoth.	Utah....	Feb. 1	Salt Lake City, Utah.
Martha Wash't'n	Utah....	Jan. 21	Salt Lake City, Utah.
Maryland Coal ..	Md.....	Feb. 6	1 Broadway, N. Y.
Mont. Coal&Coke	Mont....	Jan. 30	Jersey City, N. J.
Moon Anchor. .	Colo....	Feb. 15	Colo. Springs, Colo.
Omaha & Grant .	Colo	Jan. 29	Denver, Colo.
Portland.....	Colo....	Feb. 4	Council Bluffs, Ia.
Santa Fé...	N. Mex.	Jan. 22	Jersey City, N. J.
Silver King.....	Utah...	Jan. 19	Park City, Utah.
*Sunbeam Con...	Utah....	Feb. 1	Salt Lake City, Utah.
Union Bell.....	Colo...	Jan. 21	Colorado Springs,Col

*Special Meeting.

STOCK QUOTATIONS.

NEW YORK.

NAME OF COMPANY.	Location.	Par val.	Jan. 11. H.	Jan. 11. L.	Jan. 12. H.	Jan. 12. L.	Jan. 14. H.	Jan. 14. L.	Jan. 15. H.	Jan. 15. L.	Jan. 16. H.	Jan. 16. L.	Jan. 17. H.	Jan. 17. L.	Sales
Alamo	Colo.	1													
Alice	Mont.	25			.84		.84		.84						500
Amalgamated c.	Mont.	100	91.50	90.88	92.25	91.00	91.38	90.00	91.50	90.25	91.00	90.25	90.50		96,993
Anaconda, c	Mont.	25	47.25	47.00	47.00				47.13		46.00		46.00		1,900
Anaconda Gold.	Colo.	5							.43						500
Argentum-Jun.	Colo.	2					.29				.28				1,500
Belcher	Nev.	3													
British Col. Cop.	B. C.	5	22.50	22.25	22.25	22.13	20.50	20.00	21.13	20.38	20.88	20.63	21.00	20.63	3,000
Brunswick Cons.	Cal.	1	.26		.27						.28				600
Catalpa	Colo.	10													
Chollar	Nev.	3													
Chrysolite	Colo.	50									.10				500
Comstock T.	Nev.	100													
" bonds	Nev.	100	.05								.05				1,900
Con. Cal. & Va.	Nev.	2½	2.15		2.25	2.20	1.95	1.90	1.95						950
Creede & C. C.	Colo.	1									.12				1,000
Crescent	Colo.	10					.12								200
Cripple Cr. Con	Colo.	1							.12						1,000
Crown Point	Nev.	3													
Deadwood	Colo.	25													
Elkton	Colo.	1					1.25				1.35				300
Father de Smet.	S. Dak	100													
Garfield Con	Colo.	1													
Gold Dollar	Colo.	1													
Golden Fleece	Colo.	1	.25		.25				.25						1,800
Gould & Curry	Nev.	3													
Hale & Norcross	Nev.	3													
Homestake	S. Dak	100													
Horn Silver	Utah.	20			1.15										
Iron Silver	Colo.	20													
Isabella	Colo.	1					.69		.75						900
Jack Pot	Colo.	1													
Justice	Nev.	1													
Leadville	Colo.	10			.07½										1,000
Little Chief	Colo.	1					.17								900
Mexican	Nev.	3													
Mollie Gibson	Colo.	5					.23								500
Moulton	Mont.	25													
Mt. Rosa	Colo.	1													
Ontario	Utah.	100	7.00		7.00	6.50									750
Ophir	Nev.	3									.31				200
Pharmacist	Colo.	1	.10												1,000
Phoenix	Ariz.	1													
Plymouth	Cal.	10													
Portland	Colo.	1	3.90		3.90						3.20				500
Potosi	Nev.	3													
Quicksilver pf.	Cal.	100													
Savage	Nev.	2½													
Sierra Nevada	Nev.	3	.32												100
Small Hopes	Colo.	20									.75		.80		200
Standard Con.	Cal.	10	4.15						4.20		4.30	4.20			480
Syndicate	Cal.	1	.12												500
Tenn. Copper	Tenn.	25	19.00	18.00	19.00	17.00	19.00	17.00	18.00		18.00		17.50	16.50	
Union Copper	N. C.	10	5	4¾	5	4¾	5	4¾	5	4⅞	5.13	4.88	5.25	4.88	2,500
Work	Colo.	1													
Yellow Jacket	Nev.	3													

COAL AND INDUSTRIAL STOCKS.

Am. Sm. & Ref.		$100	30¼	57	61	60¼	64	60¼	65¼	62¼	64⅛	62⅝	62		106260
" " " pf		100	97¼	96¼	97¾	97⅛	93½	97	99½	98½	100	99	99		15,979
Am. S. & W. Con		100	43⅛	42¾	43¾	40	41⅛	38	43⅜	39	41¼	39¼	38⅞		90,100
" " " pf'r n		100	87½	87¼	76		87	86	87	85⅛	85	84	94¼		9,236
Col. Fuel & I.	Colo.	100	52⅜	52¼	52⅞	52	52	50	51⅜	49⅛	49⅛	46¾	48¾		26,780
Col. & H. C. & I.	"	100					15⅛	15	15½	14⅝	14¾	14⅜			900
Federal Steel		100	55¾	54⅜	55½	54½	56½	53½	56⅜	49	51	47	47		350165
" " pf.		100	75½	75	75¾	75	73½	75	75½	74	74⅛	70¾	69½		24,490
Fleming'n C. & C	W.Va.	100	22	19	22	19	22	19	22	19	22	19	23	20	
*Mong. R. Coal	Pa.	100	11⅜	11⅛	11⅜	11¼	11¼	11	11	10⅞					400
" " " pf.	"	100	48		48¾	48	48¾	48	48¼	48					310
National Lead		100	17⅜	17	17⅜	17	17	16¾			17		16¾		3,800
" pf.		100	90	88	87	82	87	85	86	84⅜			85¼		3,415
National Salt		100	43	42	44	42½	46	44	45⅜	44⅜	45⅜	43¾	44½		16,140
" pf.		100	73				75		73¼		75	74⅜	75		350
*Pittsburg Coal	Pa.	100	27⅛	27⅜	27⅞	27⅜	27⅜	27¼	27½	27¼					4,043
" " pf.	"	100	89	88¾	89	88¼	88¾	88⅜	86⅞	86¾					3,217
Republic I. & S.		100	15¼	15	15¾		15	14⅜	15½	14¼	14⅞	14¼	14		10,154
" " pf.		100	62		61⅝	61⅜	60¼	60	61	59⅝	60	59	56⅜		4,635
Stoss-Shef		100					22		22⅛						200
" " pf.		100	68										67⅜		200
Stan. Oil		100	806	802	809	804	808	805	808	805	808	805	804	801	56
Tenn C., I. & R.R.		100	58⅞	56¾	57⅛	55¾	56¾	54	55¾	54	55⅛	53	54⅜		25,575
Va. Coal & C.	Va.	100	6	4	6	4	6	4	6	4	4⅛	3½			

*On Pittsburg, Pa., Exchange. Total sales, 819,813.

SAN FRANCISCO, CAL.

NAME OF COMPANY.	Location.	Par value.	Jan. 10.	Jan. 11.	Jan. 12.	Jan. 14.	Jan. 15.	Jan. 16.
Belcher	Nev.	$3.00	.11	.10	.13	.19	.14	.13
Best & Belcher	"	3.00	.33	.31	.24	.25	.23	.23
Caledonia	"	3.00	.85	.84	.82	.80	.78	.74
Challenge Con	"	3.00	.17	.16	.16	.20	.16	.18
Chollar	"	3.00	.14	.14	.12	.13	.11	.11
Confidence	"	3.00	.55	.55	.52	.55	.64	.63
Con. California & Virginia	"	2.50	2.10	2.20	1.80	1.85	1.65	1.65
Crown Point	"	3.00	.13	.13	.14	.19	.14	.15
Gould & Curry	"	3.00	.59	.57	.54	.53	.41	.43
Hale & Norcross	"	3.00	.22	.20	.19	.17	.17	.17
Justice	"	2.00	.08	.08	.09	.08	.07	.08
Mexican	"	3.00	.41	.42	.38	.35	.30	.33
Occidental Con	"	3.00	.04	.04	.04	.04	.04	.04
Ophir	"	3.00	.35	.37	.76	.75	.64	.63
Potosi	"	3.00	.15	.14	.14	.14	.14	.14
Savage	"	2.50	.16	.18	.15	.16	.15	.15
Sierra Nevada	"	3.00	.29	.28	.24	.27	.21	.22
Standard Con	Cal.	10.00	4.10	4.00	3.75	4.10	4.00	4.25
Union Con	Nev.	2.50	.28	.27	.23	.24	.22	.23
Utah Con	"	1.00	.06	.06	.06	.06	.06	.06
Yellow Jacket	"	3.00	.18	.16	.14	.19	.14	.14

CALIFORNIA OIL STOCKS.*

Name of Company.	No. of shares.	Par Val.	Dec. 26. H.	Dec. 26. L.	Dec. 27. H.	Dec. 27. L.	Dec. 28. H.	Dec. 28. L.	Dec. 29. H.	Dec. 29. L.	Dec. 31. H.	Dec. 31. L.	Jan. 2. H.	Jan. 2. L.	Sales
Blue Goose	5,000	$100													
Buckhorn	20,000	10.00	3.90		4.00	3.90	4.00	3.90			4.00				
Cal. Standard	500,000	1.00	.38	.35	.37	.35	.33	.35			.37	.36	.37	.36	5,900
Caribou	100,000	1.00	.65	.62	.64	.60	.60	.55			.55	.45	.60	.58	3,400
El Dorado	100,000	1.00	2.25	1.50	2.00	1.65	1.95	1.60							
Four	300,000	1.00	.50	.48	.52	.50	.56	.52			.59	.57	.60	.57	4,345
Hanford	2,000	10.00	120	119	125	115	125	120			125	121	125		1,029
Hanf'd F. & K.			.45		.50	.45					.40		.40	.25	800
Home	100,000	1.00	4.10	3.95	4.05	4.00	4.05	3.90			4.45	4.15	4.30	4.20	975
Homestake	10,000	10.00													
Independence	600,000	1.00	.21		.23	.22	.22	.20			.21	.20	.22	.21	2,834
Kern	100,000	1.00	9.88	9.50	9.88	9.75					10.50	9.50	9.75		
Kern River	20,000	5.00	16.50	16.00	16.25	16.00	16.50	16.25			17.00	16.50	17.00	16.50	15
McKittrick	60,000	1.00	.35		.43		.35				.36		.36	.33	1,000
Mo'arch of Ari	500,000	1.00	.44		.44		.50	.44			.66	.61	.80	.75	4,600
Monte Cristo	500,000	1.00	2.20	2.05	2.30	2.15	2.40	2.30			2.35	2.30	2.40		7,316
Oil City Petrol	5,000	100	35.00	32.50	35.50	32.50	37.50	35.00			36.00		36.50	36.00	120
Petrol. Center	500,000	1.00	.24	.23	.24	.22	.24	.22			.24	.23	.26	.24	10,409
Rex	100,000	5.00											.45		
San Joaquin	100,000	1.00	10.50	10.13	10.25	10.00	10.50	10.25			11.25	10.88	13.75	12.50	1,600
Sterling	250,000	1.00	2.68	2.65	2.80	2.70	2.90	2.65			2.75		3.10	2.90	1,155
Sunset (Orig.)	100,000	5.00	.45		.45		.45	.44			.40		.40		1,300
Twenty-eight	60,000	10.00	2.45	2.33	2.43	2.38	2.50	2.40			2.43	2.45	2.43	2.45	600
Yukon	100,000	2.50	.55	.45	.55	.45	.53	.51			.50		.50		50

* Producers' Oil Exchange, San Francisco. Total sales, 48,139 shares.

BOSTON, MASS.†

NAME OF COMPANY.	Par val.	Shares issued.	Jan. 10. H.	Jan. 10. L.	Jan. 11. H.	Jan. 11. L.	Jan. 12. H.	Jan. 12. L.	Jan. 14. H.	Jan. 14. L.	Jan. 15. H.	Jan. 15. L.	Jan. 16. H.	Jan. 16. L.	Sales.
Adventure Con.	$25	100,000	10.00		10.50	10.00	10.00		10.50	10.25	10.25	10.00	10.00	9.50	675
Aetna Con., g.	5	100,000													
Allouez	25	80,000					3.25		5.00						50
Amal. Copper	100	750,000	92.00	91.00	91.75	91.00	92.13	91.00	91.38	90.00	91.25	90.63	91.25	90.50	3,932
Am. Z. L. & Sm.	25	60,000							12.50		11.50				100
Arcadian, c	25	150,000	15.00	16.50	18.00		19.50		19.50				18.50		201
Arnold	25	60,000	4.75												60
Ash Bed	25	40,000							.50						100
Atlantic, c	25	40,000	29.00	28.00			28.75		28.75		29.0				165
Baltic, c	25	100,000	34.00	32.50	34.50	33.75	34.00		34.50	34.00	35.00	34.75	34.50	34.00	3,925
Bingham, c. g.	10	190,000	16.00	15.88	16.25	16.00			16.50	16.00	16.00				1,192
Bonanza Dev.	10	300,000	1.25						1.25		1.13		1.00		350
Boston	10	100,000							6.00		6.50				200
Boston & Mont.	25	150,000	315	311	318	315	326¼	317	321	318	324	320	325	320	2,962
Breece	25	200,000													
British Columbia	5	200,000									22.25		22.00		45
Butte & Bost., c.	10	200,000	80.00	79.00			83.00	82.00	82.00		81.50	80.00	81.00	80.00	8,061
Cal. & Hecla, c	25	100,000	335		335				336				23.00		28
Centennial, c	25	90,000	23.25	22.75	23.50		24.25	23.88	23.50		23.25	23.00			1,730
Cent'l-Eureka	25	100,000			23.50	23.00	24.25				24.00	23.50	25.00	23.50	647
Cochiti, g	10	175,000	10.50	10.00	10.50		10.50	10.25	10.38	10.00	10.25	10.13	10.25	10.00	1,989
Copper Range	25	100,000	36.50	34.00	37.00	34.50	37.00	36.50	37.00		38.00	37.00	39.00	37.50	5,806
Dominion Coal	100	150,000	38.00	37.75	38.00	37.25			37.50		37.50		37.50	36.75	1,385
do. pref	100	30,000	110	108	110						108				95
Elm River	12	100,000			5.25	5.00	5.00		5.13	5.00	5.00				765
†Franklin, c	25	100,000	17.63		17.50	17.38	18.00	17.25	18.25	17.00	17.00	16.63	16.63	15.00	2,330
† " rights													.30	.15	2,808
Humboldt										.50					200
I. Royal Con., c	25	100,000	38.00	37.00	38.00	37.50	38.50	37.50	38.50	38.50	38.00	36.50	36.50	35.00	7,991
Mass Con	25	100,000	13.38	13.25	14.00	13.00	13.63	13.00	13.75	13.50	13.50				907
Mayflower	25	100,000					2.25		2.00						60
Melones	10	157,577	1.00								1.13				500
Michigan	25	100,000	6.00				6.00		6.00		6.00	5.88	6.63	6.00	419
Mohawk, c	25	100,000	25.00	23.50	24.50				24.50	24.00	24.00		24.00	23.75	1,108
Mont. C. & C.	25	200,000	6.25	6.00			6.25						6.25	6.00	310
N. A. G. Dreg.	10	100,000	1.00				1.00						1.00		300
N.E. Gas & Coke	100	160,000	15.00		13.50		13.00		13.00		13.50	13.00			399
New Idria	5	100,000													
Old Colony	25	100,000			8.50										5
Old Dominion, c	25	150,000	32.00	30.50	32.38	31.75	32.50	31.75	32.25	31.88	32.00	31.50	31.50	30.00	12,221
Osceola, c	25	93,000	82.00	81.00	82.00		84.00	82.00	84.25	82.63	83.00	82.00	83.00	82.00	1,543
Parrot, s c	10	229,350	49.25	48.38	49.00	48.50	49.25	49.00	49.50	49.00	50.00	49.00	50.00	49.25	1,244
Quincy, c	25	100,000	177	176	180	178	180	178	179	177	179	177	178	177	1,017
Rhode Island	25	100,000	5.00	4.50	4.50	4.38							4.50	4.25	1,155
Santa Fe, g. c	10	250,000							7.00	6.88			6.93	6.75	360
Santa Ysabel	5	130,000	2.50	2.25											455
Tamarack, c	25	60,000	336½	330	335	330	335	331	333	329	333		330		151
Tecumseh	25	80,000	1.75	1.63			2.00		2.00	1.88	1.88				325
Trimountain	25	100,000	21.25	20.00	20.50	20.25	20.75	20.50	21.13	20.38	22.00	21.25	21.88	21.25	2,908
Union C. L.	25	80,000							3.00		3.13				50
UnitedStatesMg.	25	250,000							10.50	10.00	10.38	10.00	10.00		1,935
Utah Con., g. c.	5	900,000	33.00		34.50	33.50	34.00	33.50	34.00	33.50	33.50	33.00			350
Victoria	25	100,000	3.88	3.75	3.75	3.63	4.00	3.50	4.00	3.88	4.00	3.93	4.00		2 689
Washington	25	60,000											.50		100
Winona, c	25	100,000	5.50		5.75	5.50	6.00	5.75	6.00		6.00	5.88	5.88	5.75	1,420
Wolverine, c	25	60,000	49.00	48.50	49.00	46.50	49.50	19.00	50.00	49.00	49.50	49.00	49.00	48.75	1,583

†Official quotations Boston Stock Exchange. Total sales, 76,369 shares. †Ex-rights.

PHILADELPHIA, PA.§

NAME OF COMPANY.	L'cation.	Par Val.	Jan. 10. H.	Jan. 10. L.	Jan. 11. H.	Jan. 11. L.	Jan. 12. H.	Jan. 12. L.	Jan. 14. H.	Jan. 14. L.	Jan. 15. H.	Jan. 15. L.	Jan. 16. H.	Jan. 16. L.	Sales
Am. Alkali		$50	2.38	2.25	2.38	2.25	2.38		2.38		2.38	2.24	2.25		3,385
Am. Cement		10	8.25	7.88	8.13								7.88		134
†Bethlehem Iron	Pa.	50	60.00	59.75	60.00				59.88				59.00		794
Bethlehem Steel	"	50									18.75	17.50	18.00	17.13	725
Cambria Iron	"	50			45.75		45.75		45.75		45.75		45.50		261
Cambria Steel	"	50	20.50	20.38	20.50	20.38	20.63	20.38	20.50	19.75	20.00	18.13	18.00	17.00	14,355
Susq. I. & S	"	10	2.25		2.25		2.50	2.38	2.63	2.38	2.50	2.38	2.38		2,720
United Gas I	"	50	124	123	125¼	123½	126	125¼	125	123¾	124	123	124	123¼	4,062

Total shares sold, 26,970. § Reported by Townsend, Whelen & Co., 309 Walnut St., Philadelphia. † Ex-dividend.

SALT LAKE CITY, UTAH. Jan. 12

STOCKS.	Shares.	Par val.	Bid.	Asked.	STOCKS.	Shares.	Par val.	Bid.	Asked.
Ajax	300,000	$10	$0.78	$0.78½	Horn Silver	400,000	$25	$1.07½	
Alice	400,000	25	.37½		Joe Bowers	400,000	1	.02¾	$.03
Bullion-Beck & Ch.	100,000	10		4.25	Joe Bowers Ext'n.	700,000	¼		
Centennial Eureka	200,000	25	22.50		Little Pittsburg	400,000	5		
Chloride Point	500,000	1			Lower Mammoth	150,000	1	3.80	3.82
Cons. Mercur	100,000	5	3.00	3.15	Mammoth	400,000	5	2.27½	2.30
Daisy	500,000	3		.01½	May Day	400,000	¾	.33	.35
Dalton	500,000	5	.09¾	.10½	Northern Light	400,000	5	.05½	.05½
Dalton & Lark	2,500,000	1		.07	Ontario	150,000	100	7.00	8.00
Daly	150,000	20	1.85	1.97	Sacramento	1,000,000	5	.36¾	.37¼
Daly-West	150,000	20	29.20	29.70	Showers Cons.	400,000	5	.10	.14
Dexter	300,000	5	.90	1.25	Silver King	150,000	20	65.00	
Eagle & Blue Bell	250,000	1	.81	.90	Star Consolidated	500,000	1	.77	.77¼
Four Aces	250,000	1	.02	.05	Sunbeam	250,000	1	.39	.42
Galena	100,000	10	.06	.12	Swansea	100,000	5	3.80	3.95
Geyser-Marion	300,000	5			South Swansea	150,000	1	.98	1.01
Golden Eagle	250,000	1	.01	.03	Utah	100,000	1	.62	.75
Grand Central	250,000	1	5.65	5.85	Valeo	200,000	10	.30	35
Homestake	400,000	1			Yankee Consol'd	250,000	0.10	.15¾	.17⅜

TORONTO, ONT.

NAME OF COMPANY.	Par val.	Jan. 4. B.	Jan. 4. A.	Jan. 5. B.	Jan. 5. A.	Jan. 7. B.	Jan. 7. A.	Jan. 8. B.	Jan. 8. A.	Jan. 9. B.	Jan. 9. A.	Jan 10. B.	Jan 10. A.	Sales
Ontario:														
Golden Star	1			.01⅝				.01¾		.01¾	.01⅞			3,500
Ham Reef	1	.01⅝				.01⅝	.01¾	.01⅝		.01⅝	.01¾			17,831
Olive	1									.10				500
British Col.:														
Cariboo M'k	1	.40	.60	.40	.60	.40	.50	.45				.60		
Crow's N. C.	25	55.00	61.00	60.50	65.00	63.00	70.00	62.50	63.50	60.00	70.00	35.00	69.50	20
Deer Trail	1	.02¾	.03	.02¾	.03	.02¾	.03⅛	.02⅞	.03⅛	.02½	.03¼	.02½	.03	14,500
Eve Star	1	.05	.08	.04	.07	.05	.08			.04	.07	.04	.08	
Fairview	1	.02⅜		.02¾	.02½	.02⅛	.02¾	.02⅞	.03¼	.08	.03½	.03¼		75,750
Iron Mask	1	.35	.45	.35	.41	.30	.40	.37	.39½	.30	.41	.45		
Jim Blaine	1													
Knob Hill	1	.49	.53	.40	.55	.45	.53	.40	.52½					
Mont Cristo	1													
Mont & Lon	0.24													
Morrison	1			.02½	.03½	.02½	.03½	.02½	.03½	.03	.03½	.03¾	.04½	1,000
Mount. Lion	1			.25		.30	.43			.24	.35	.24		2,000
North Star	1	.33	.91	.38	.90½	.36	.91	.39½	.90¼	.39½	.90½	.39	.91	
Payne	1	.62	.67	.63	.66	.60	.65	.56	.60	.62	.64	.58¼	.59¾	500
Princess M.	1	.01	.03	.01	.03	.01	.03							
Rambler	1	.26	.27½	.26	.26¾	.27½	.28½	.24	.28¾	.25½	.30	.29¼	.29¾	49,500
Republic	1	.59	.61½	.58	.62	.60	.61½	.55¼	.59¾	.59½	.60½	.57½	.58¼	
Van Anda	1	.01¼	.02¼	.02	.02½	.02½	.02¾	.02½	.02¼	.02½	.02¼	.02½	.02½	5,500
Victory Tri	1									.01½				8,950
Virtue	1	.27	.31	.27	.31	.27½	.31	.2	.26½	.26	.29	.27	.29½	6,500
War Eagle	1	1.02	1.05	1.01	1.05	1.00	1.05	.95	1.01½	.97½	1.01	.96	1.00	
Waterloo	0.10	.02	.03	.02	.03	.02	.03	.02	.02¾	.02½	.02¾	.02½	.02¾	1,000
White Bear	1	.04¼		.04¼	.04¾	.04¼	.04½	.04¼	.04¾	.04¼	.04¾	.04¾	.05	65,600
Winnipeg	1	.02¾	.04	.02½	.04	.02	.04½	.02½	.03½	.03½	.04	.02¾	.03½	
Develop Co.:														
B.C.G. Field	1	.02		.02	.02½	.02	.03	.02	.03	.02	.03	.02	.03	700
Can. G. F. S.	0.10	.07¼	.08	.07½	.08	.07¾	.07¾	.07½	.08	.07	.07¾	.07	.08	12,100

Total shares sold, 263,151.

STOCK QUOTATIONS.

COLORADO SPRINGS, COLO.‡

NAME OF COMPANY.	Par val.	Jan. 5. B.	Jan. 5. A.	Jan. 7. B.	Jan. 7. A.	Jan. 8. B.	Jan. 8. A.	Jan. 9. B.	Jan. 9. A.	Jan. 10. B.	Jan. 10. A.	Jan. 11. B.	Jan. 11. A.	Sales.
Acacia	$1	.28¼	.28½	.28¾	.29	.28¼	.28½	.28¾	.23⅞	.29½	.30	.30	.....	23,500
Alamo	1	.11	.12	.11⅜	.12	.11⅜	.11¾	.11⅜	.12	.11⅜	.12	.11⅜	.12	8,000
Am. Con	1	.06¾	.06⅞	.07	.07⅛	.06⅝	.07	.06⅛	.07⅛	.06¾	.07	.06⅝	.06⅞	2,000
Anaconda	1	.....	.42½	.45¼	.45½	.44½	.45⅛	.44⅛	.45⅛	.42	.....	.42⅛	.44	23,600
Anchor	1	.02½	.03	.....	.03	.....	.03	.02½	.03	.02½	.03	.02⅝	.03	.....
Anchoria L	1	.75	.....	.75	.....	.75	.....	.80	.....	.80	.....	.75	.....	.....
Antelope	1	.02¼	.02¾	.02¼	.02⅞	.02¼	.02⅞	.02½	.02⅞	.02¼	.02⅝	.02¼	.02⅝	500
Aola	1	.05	.05	.....	.....	.05⅜	.05¾	.05	.05⅜	.5	.05⅞	.....	.....	3,000
Arcadian	1	.....	.15	.....	.....	.04⅜	.04⅝	.04¾	.04⅝	.04½	.....	.04⅜	.04⅞	.....
Arg'ntum J	1	.22	.....	.27½	.29½	.29	.30	.25	.30	.28¾	.30	.28	.30	9,100
Banner	1	.03	.03⅛	.02⅝	.03⅛	.03⅛	.....	.03	.03¼	.03	.03¼	.03	.....	2,000
Battle Mt.C	1	.22	.....	.24¼	.....	.23¾	.25¼	.25	.25¼	.24¾	.25	.24½	.25¼	28,900
Ben Hur	1	.....	.....	.....	.03½	.08	.08¾	.....	.09⅞	.....	.08¼	.....	.03⅞	1,000
Black Bell	1	.11¾	.....	.11⅝	.....	.09½	.....	.11⅞	.....	.11⅞	.....	.11¾	.....	.....
Blue Bell	1	.14	.14½	.14¼	.15	.14¼	.14⅜	.14	.14⅜	.14	.15	.13¾	.14½	5,000
Bob Lee	1	.04⅝	.....	.04⅜	.05⅜	.05¾	.05¼	.06	.06¼	.06¼	.06¾	.05⅞	.06	88,300
Buckhorn	1	.04½	.05¼	.06	.06½	.05	.06	.05	.05½	.05	.05¼	.06¼	.06½	15,000
Cadillac	1	.02½	.02½	.02½	.02½	.02	.02¼	.02½	.02½	.02½	.....	.02½	.02⅝	8,000
Central C'n	1	.06¾	.07	.06¾	.06⅝	.06¼	.06⅜	.06½	.06⅜	.06¼	.06½	.06	.06½	54,000
Champion	1	.06⅞	.07	.06¾	.07	.06½	.06¾	.06⅝	.07	.06⅝	.06⅞	.06¼	.06¾	7,028
Chicolo	1	.02⅜	.02⅞	.02¾	.03	.02⅜	.02¾	.02⅜	.02¾	.02⅝	.03	.02⅝	.02⅞	1,500
C. K. & N	1	.02⅜	.02¾	.02⅜	.02¾	.02⅜	.02¾	.02⅜	.02¾	.02⅜	.02¾	.02⅜	.03	14,000
C. C.Col'bia	1	.11¼	.11¾	.11¼	.11½	.11	.11⅜	.11½	.12	.11¾	.12¼	.12	.12¾	11,000
C. C. G. Ext	1	.12	.14¾	.14¾	.....	.14¾	.15	.14	.16	.14	.15½	.14⅛	.15	5,000
C. C. & Man	1	.09½	.09⅞	.10	.10¼	.10	.10⅜	.09¾	.09⅞	.09⅛	.09⅝	.09⅛	.09⅝	36,000
Copper Mt.	1	.04⅞	.04½	.05	.05⅛	.04½	.04⅜	.04⅜	.04⅝	.04⅜	.04⅝	.04¼	.04½	53,000
Creede& CC	1	.....	.....	.....	.15	.10	.12½	.10	.13	.10	.18	.10	.13	.....
C. C. Con	1	.12¼	.12½	.12⅜	.12⅝	.12¼	.12½	.11⅞	.12	.11⅝	.12¼	.....	.12¼	15,600
Dante	1	.09	.09½	.09¼	.09⅝	.09⅝	.09¾	.09	.09¼	.09¼	.09½	.09⅜	.....	14,000
Des Moines	1	.....	.....	.05½	.....	.05¼	.07	.05	.07	.05½	.....	.05½	.06	.....
Eclipse	1	.08	.08⅜	.08	.08¼	.08	.08¼	.....	.08	.07⅜	.....	.....	.08	21,000
Elkton Con	1	1.86¼	1.87½	1.86	1.87	1.26	.....	1.86½	1.87	1.87½	1.88½	1.28	1.89½	14,061
El Paso G	1	.50	.50¼	.50	.50¼	.50	.50¼	.50	.....	.50	.50⅛	.50	.50⅛	36,900
Enterprise	1	.15½	.16	.....	.20	.....	.....	.....	.....	.....	.....	.....	.15	.....
F. Rawlings	1	.....	.....	.....	.25	.....	.....	.....	.....	.....	.....	.....	.....	.....
Findley	1	.12⅛	.....	.12	.13½	.12	.12⅜	.12¼	.....	.12	.....	.12¼	.....	3,000
Garf. Conn.	1	.07	.....	.07	.....	.07	.....	.07	.....	.07½	.....	.07½	.....	15,000
Golden Fl	1	.24	.25	.23	.23½	.24	.25	.....	.30	.23	.30	.24	.30	2,500
Gold Hill	1	.02¾	.03	.02¾	.03	.03	.03½	.03	.03¼	.03	.03¼	.03¼	.03¼	47,000
Gold Sov'n	1	.05	.05⅛	.05⅜	.05⅝	.05	.05⅜	.05	.05¼	.04	.05⅛	.05	.05⅜	15,500
Hayden	1	.01¾	.02	.01⅝	.02	.01½	.02	.....	.02	.01¾	.02	.01¾	.02	2,000
Humboldt	1	.03	.04	.03½	.....	.03⅜	.03¾	.03⅜	.03½	.03⅜	.03½	.03¼	.03½	27,000
Ida May	1	.23	.24	.23½	.25	.23	.....	.23	.24¾	.23½	.24⅜	.24	.25	2,000
Ing. Con	⅛	.21⅜	.22	.21⅝	.22½	.21¾	.22⅜	.21	.21⅝	.20⅞	.21½	.21	.21⅜	11,000
Ironclad	1	.05	.....	.05	.05½	.05½	.....	.05¼	.....	.05½	.....	.05⅜	.06	16,000
Isabella	1	.69½	.69⅝	.70	.71½	.68¾	.69½	.68⅝	.69	.68½	.69¾	.68½	.....	16,100
Jack Pot	1	.69	.71	.70	.71½	.70	.71½	.69	.70½	.69½	.71	.65	.70	18,600
Josephine	1	.01⅞	.....	.02⅜	.02½	.01⅝	.02	.01⅝	.02	.01⅝	.02	.01⅝	.02	3,500
Key West	1	.02¾	.03	.03½	.....	.03⅜	.03	.....	.....	.02½	.03¼	.02¾	.03	4,000
Lexington	1	.12½	.12¾	.13¼	.14	.....	.13	.12⅛	.12½	.12¼	.12⅝	.12¼	.12½	59,000
Magnet R.	1	.03⅞	.04¼	.03¾	.04¼	.03½	.04	.03⅜	.03½	.03⅜	.03⅝	.03⅜	.03	3,000
Margaret	1	.02	.02½	.02½	.02⅝	.02¼	.02½	.02¼	.02½	.02¼	.02⅜	.02¼	.02⅛	7,000
Margery	1	.02⅜	.03	.02½	.03	.02⅜	.02½	.02	.03	.02⅜	.02⅞	.02¼	.03	.....
Maton	1	.....	.20	.18	.....	.14	.20	.....	.20	.....	.20	.....	.20	.....
Midway	1	.04½	.04⅝	.04⅜	.05	.04⅝	.04¾	.04½	.04¾	.04	.04⅝	.04½	.04⅜	7,000
M. J. T	1	.03⅜	.04	.03¾	.04¼	.04¼	.04⅜	.04⅛	.04½	.04½	.04⅝	.04¾	.04½	43,000
Mobile	1	.03⅛	.03¾	.03½	.03¾	.03½	.03⅜	.03½	.03¾	.03½	.03⅝	.03½	.03⅝	14,000
Moll.Dwyer	1	.06⅛	.06⅜	.06⅜	.06⅝	.06½	.06⅜	.06¾	.06⅝	.06⅝	.06⅞	.06⅜	.06½	93,000
Mollie Gib.	1	.20	.....	.20	.25	.20	.....	.20	.....	.21½	.24	.22½	.....	1,500
Monarch	1	.09¾	.09¾	.09¾	.09¾	.09¾	.....	.09½	.09¾	.09¼	.09¾	.09¼	.10	14,800
Montreal	1	.04	.....	.04¼	.....	.04	.....	.04	.....	.04	.....	.04½	.....	.....
Moon-A'c'r	1	.20	.....	.22	.....	.20	.....	.20	.....	.20	.30	.20	.30	900
Morning S	1	.03¾	.04	.04	.04½	.03⅝	.04	.03¾	.04	.03¾	.03⅞	.03⅝	.03⅞	18,000
Mtn.Beauty	1	.09¾	.09⅝	.09¼	.09⅜	.09⅜	.09	.08⅝	.09	.08⅝	.09	.08¾	.09⅜	45,000
Mt. Rosa	1	.30	.42	.30	.....	.42½	.46	.42½	.45	.40	.50	.40	.....	1,000
National	1	.10	.10⅛	.10⅜	.10¾	.10	.10¼	.10	.10⅜	.09⅞	.10	.09¾	.10	76,000
Nellie V	1	.07	.07¼	.07¼	.....	.07	.07⅝	.07	.07¼	.06¾	.07	.06⅝	.07	2,500
New Haven	1	.08	.08½	.08	.08⅛	.08	.08⅝	.08	.08¼	.07¾	.08	.07¾	.07⅞	9,000
Olive B'nch	1	.04⅝	.05	.04¾	.05	.04½	.04⅝	.04½	.04⅝	.04⅜	.04⅞	.04½	.04⅝	18,000
Ophir	1	.35	.....	.33	.....	.33	.....	.34	.....	.34	.....	.34	.....	2,000
Oriole	1	.04	.04¼	.04½	.....	.04½	.04⅝	.04½	.....	.03⅞	.04	.03¾	.04	6,000
Orphan	1	.15	.....	.15	.....	.13	.16	.13	.....	.....	.....	.15½	.20	.....
Pelican	1	.02	.02⅜	.02½	.02⅜	.....	.02⅜	.....	.02⅜	.02	.02⅝	.02⅛	.02⅜	.....
Pharmacist	1	.09	.09½	.09	.09½	.08½	.09⅝	.08¾	.09	.08½	.09	.08½	.08¾	12,000
Pilgrim	1	.09	.09½	.09	.....	.10⅝	.11	.10½	.11⅜	.11	.12	.11⅜	.12	16,500
Pinnacle	1	.17	.18	.17	.19	.....	.....	.....	.....	.14½	.19	.15	.18½	.....
Portland	1	3.35	3.43	3.39	3.40	3.29	4.37	.....	3.30	3.25	3.37	3.25	3.29	4,100
Prince Alb.	1	.06	.06⅜	.06¼	.06½	.06	.06½	.06	.06¾	.06⅜	.06¼	.06⅜	.06¼	83,000
Princess	1	.04¾	.05	.05¼	.05½	.05¼	.05½	.05½	.05¾	.05	.05½	.05¼	.05½	4,000
Progress	1	.05	.05½	.05	.....	.05⅜	.05¾	.05⅜	.06	.05½	.06	.06	1,000	
Pythias	1	.04¾	.05	.05	.....	.04½	.05	.04¾	.05¼	.04⅞	.05	.04⅝	.05	11,500
Republic	1	.08	.08¼	.07⅝	.08	.07¾	.08	.07⅜	.08	.07⅜	.08	.07⅞	.08	11,900
Rob't Burns	1	.05½	.....	.05⅜	.05½	.04¾	.05½	.05	.05¼	.04⅜	.05¼	.04½	.....	23,000
Rose Maud	1	.08	.05½	.08¼	.08½	.08	.08½	.08	.08¼	.07⅜	.08	.08	.08½	11,000
Rose Nicol	1	.11	.11½	.10½	.10¾	.10¼	.13½	.10	.11	.10¼	.10½	.10	.....	10,000
Sliver Gold	1	.....	.....	.01¾	.02	.01⅝	.02	.01¾	.02	.01⅝	.02	.01⅝	.02	.....
Theresa	1	.06½	.07	.06½	.08	.07	.07½	.07	.08	.07¼	.07½	.07	.07⅜	11,000
Trachyte	1	.06⅛	.06⅜	.06½	.06⅝	.06½	.07	.06¼	.06¾	.06¼	.06¾	.06¾	.06⅝	17,000
Uncle Sam	1	.04	.04¼	.04	.04¾	.04	.04¼	.04	.04¼	.04	.04¾	.04	.04⅝	.....
Union	1	.....	.....	.04	.....	.....	.....	.....	.....	.09	.12	.07	.....	.....
Va. M	1	.07½	.09	.07½	.10	.....	.07¼	.....	.07	.08	.07¼	.....	.....	.....
Vindicator	1	.....	.....	.....	1.29	.....	.....	.....	.....	.....	1.29	.....	.....	.....
Work	1	.20½	.21⅞	.21¼	.22	.21¾	.22	.21	.21¼	.20⅝	.21	.20½	.21⅞	16,800
Zenobia	1	.10	.....	.10	.....	.10	.....	.10	.....	.10	.....	.10	.....	.....

Colorado Springs Mining Stock Exchange.

MONTREAL, CANADA.*

NAME OF COMPANY.	Par val.	Week, Jan. 2. H.	L.	Sales.
Big Three	$1	.01½	.02	2,500
California	1	.03½	.05	.....
Can. Gold Fields	0.10	.07	.08¾	.....
Deoca	1	.01	.05	.....
Deer Trail Con	1	.01½	.03	.....
Evening Star	1	.08	.06	.....
Golden Star	1	.01¼	.06	.....
Gold Hills Dev	1	.02½	.03½	.....
Knob Hill	1	.40	.53	.....
Monte Christo	1	.03	.....	.....
Montreal G. F	$1	.02	.03½	.....
Montreal-London	0.24	.05	.06¾	700
Okanogan	.....	.....	.....	.....
Oregon	1	.15½	.17½	7,300
Payne	1	.64	.78	1,000
Rambler-Cariboo	1	.20	.52	.....
Republic Con	1	.53	.65	1,000
Slocan-Sovereign	1	.07½	.10	3,500
Virtue	1	.25	.35	4,000
War Eagle	1	.93	1.04	.....

* Montreal Stock Exchange. Total sales, 20,000 shares.

MEXICO. Jan. 4.

NAME OF COMPANY.	No. of shares.	Last div'd.	Prices. Op'g.	Cl'g.
Durango:				
Barradon y Cab	2,400	.....	$20	$15
Candelaria de Pan	1,200	.....	20	20
Capuzaya Guan	2,400	.....	15	12
Restauradora	10,000	.....	20	10
Guanajuato:				
Angustias	2,400	5.00	115	90
Cinco Senoresy An.	2,000	15.00	245	220
Guadalupe Hacie'a.	10,000	3.00	205	210
Trinidad, aviadora	2,000	.....	6	7
do. aviada	400	.....	10	7
Zona Minera de Poz	2,400	.....	6	8
Hidalgo:				
Amistad y Concord	9,600	1.41	27	29
Arevalo	730	.....	200	230
Bartolome de Med	2,000	2.00	70	60
Carmen	1,100	7.75	150	130
Luz Ca Maravillas	800	.....	100	80
Pabellon	800	27.80	20	10
Hidalgo:				
Real del Monte	2,554	10.00	550	500
San Francisco Hc.	6,000	1.00	115	120
Soledad	960	5.00	270	230
Sorpresa	960	7.50	210	200
Union Hacienda	2,000	5.00	240	200
Mexico:				
Coronas	500	.....	75	75
Esperanza y An	3,000	10.00	900	950
Michoacan:				
Luz de Borda ava.	4,000	.....	20	28
S. Luis Potosi:				
Concep. y An	2,400	.....	210	200
Zacatecas:				
Asturiana y An	2,500	10.00	160	150
Cabezon	2,400	.....	15	10
C'delar de Pinos	2,500	.....	150	200
Palma de Somb	2,400	.....	40	30

DENVER, COLO.‡

NAME OF COMPANY.	Par val.	Jan. 7. B.	Jan. 7. A.	Jan. 8. B.	Jan. 8. A.	Jan. 9. B.	Jan. 9. A.	Jan. 10. B.	Jan. 10. A.	Jan. 11. B.	Jan. 11. A.	Jan. 12. B.	Jan. 12. A.	Sales
Acacia	1	.28¼	.29	.28½	.29	.29	.29½	.28¼	.29¼	.29¾	.29⅞	.23½	.23½	12,000
Anaconda	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Arg. J	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dictator	1	.03	.04	.....	.....	.....	.....	.....	.....	.....	.....	.03¼	.....	14,500
Elkton	1	1.85¾	1.89	1.86	1.86⅝	.....	.....	.....	.....	.....	.....	.....	.....	10,434
Franklin	1	.02¼	.02⅜	.....	.....	.....	.....	.....	.....	.02¼	.02½	.02¼	.02½	2,000
Gold. Sov'n.	1	.08¾	.08⅞	.....	.....	.....	.....	.08	.08¾	.08	.08⅜	.07⅞	.08⅛	8,000
Key West	1	.02½	.08⅜	.08	.08½	.03¾	.03⅝	.....	.08	.02¾	.08⅛	.....	.....	21,000
Magnet R'k	1	.....	.....	.....	.....	.03⅜	.04	.....	.....	.....	.....	.....	.....	7,000
National	1	.10⅝	.....	.10⅜	.....	.....	.....	.10	.10⅜	.....	.....	.09¾	.10	12,000
New Haven	1	.08¾	.09⅛	.....	.08½	.08	.09⅜	.....	.....	.07⅞	.08⅛	.....	.....	28,070
Pappoose	1	.....	.....	.07¼	.07½	.....	.....	.07	.....	.07	.07½	.....	.....	5,000
Pharmacist	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Reno	1	.....	.....	.....	.....	.....	.....	.....	.....	.03¼	.03⅜	.....	.....	3,000
Republic	1	.....	.....	.....	.....	.....	.....	.....	.....	.07¾	.08	.....	.....	2,000

‡ Official Quotations Denver Stock Exchange. Total sales, 124,934 shares.

SPOKANE, WASH. Week Jan. 10

NAME OF COMPANY.	Par val.	B.	A.	Sales.
Crystal	.....	.04¼	.05½	.....
Deer Trail Con	$1	.02½	.03⅛	6,000
Evening Star	1	.04½	.05½	.....
Gold Ledge	.....	.01	.02	27,000
Jim Blaine	1	.....	.....	.....
Lone Pine Surp. Con	1	.05¾	.06½	533
Morning Glory	0.10	.07	.08	12,500
Mountain Lion	$1	.26¾	.40	1,000
Princess Maud	0.10	.01⅝	.02½	2,500
Quilp	1	.23¼	.27	1,000
Rambler Cariboo	0.25	.25¾	.30½	19,000
Reservation	.....	.03½	.04¾	6,000
Sullivan	.....	.12	.13½	9,000
Tom Thumb	.....	.12¼	.15	8,000

PARIS. Dec. 27.

NAME OF COMPANY.	Country.	Product.	Capital Stock.	Par value.	Latest divs.	Prices. Opening.	Prices. Closing
			Francs.	Fr.	Fr.	Fr.	Fr.
Acieries de Creusot	France	Steel mfrs	27,000,000	2,000	85.00	1,760.00	1,760.00
" " Firminy	"	" "	3,000,000	500	175.00	3,220.00	3,205.00
" " Fives-Lille	"	" "	12,000,000	500	.....	480.00	472.50
" " Huta-Bank	Russia	Iron & steel	.....	500	.....	3,510.00	3,550.00
" " la Marine	France	Steel mfrs	20,000,000	500	60.00	1 571.00	1,577.00
Anzin	"	Coal	.....	.....	.....	360.00	6,250.00
Boleo	Lower Cal	Copper	.....	500	176.00	2,570.00	2,650.00
Briansk	Russia	Coal & iron	.....	500	.....	649.00	687.50
Champ d'Or	S. Africa	Gold	3,375,000	25	3.75	31.50	31.50
Courrieres	France	Coal	600,000	300	90.00	2,345.00	2,435.00
Dombrowa	Russia	"	.....	500	12.50	1,000.00	990.00
Dynamite Centrale	France	Explosives	.....	500	22.50	425.00	420.00
Escombrera-Bleyberg	Spain	Lead	.....	500	70.00	1,050.00	1,135.00
Fraser River	Brit. Col'mb.	Gold	250,000	25	.....	8.00	8.00
Huanchaca	Bolivia	Silver	40,000,000	125	5.00	153.00	158.50
Laurium	Greece	Zinc & lead	16,300,000	500	30.00	515.00	498.00
Malfidano	Italy	Zinc	12,500,000	500	50.00	925.00	985.00
Metaux, Cie. Fran. de	France	Metal d'lers	25,000,000	500	10.00	480.00	480.00
Mokta-el-Hadid	Algeria	Iron	13,312,500	500	85.00	980.00	975.00
Napthe Baku	Russia	Petroleum	.....	.....	.....	757.50	750.00
Napthe Nobel	"	"	.....	.....	.....	595.00	550.00
" " parts	"	"	.....	.....	.....	11.800.00	11,000.00
Nickel	N. Caled'nia	Nickel	10,000,000	250	17.50	505.00	510.00
Penarroya	Spain	Coal, etc	.....	500	100.00	2,430.00	2,510.00
Rebecca	Colo'do, U.S.	Gold	5,000,000	25	.....	2.25	2.25
Salines de l'Est	France	Salt	.....	500	5.00	210.00	210.00
Salines du Midi	"	"	.....	500	25.00	870.00	867.00
Vielle Montagne	Belgium	Zinc	9,000,000	80	36.00	615.00	655.00

LONDON Jan. 4.

NAME OF COMPANY.	Country.	Author-ized capital.	Par value.	Last dividend. Amt.	Last dividend. Date.	Quotations. Buyers	Quotations. Sellers.
			£ s. d.	s.d.		£ s. d.	£ s. d.
American:							
Alaska-Mexican, g	Alaska	£200,000	1 0 0	0 4.8	Nov. 1900	17 6	1 0 0
Alaska-Treadwell, g	"	1,000,000	5 0 0	1 6	" "	5 2 6	5 5 0
Anaconda, c., s	Montana	6,000,000	5 0 0	3 2	Oct., "	9 12 6	9 17 6
De Lamar, g., s	Idaho	400,000	1 0 0	0 6	May, 1900	3 6	4 6
El Oro	Mexico	1 000,000	1 0 0	1 0	Aug., 1900	1 6 3	1 7 6
Enterprise, g	British Col'mbia	200,000	1 0 0	.....	.....	10 0	15 0
Grand Central, g., s	Mexico	300,000	1 0 0	2 0	Jan., 1900	8 9	11 3
Hall Mg. & Sm., c., s	British Col	250,000	1 0 0	.....	.....	5 0	6 0
Le Roi, g	" "	1,000,000	5 0 0	5 0	Nov., 1899	5 17 6	6 2 6
Le Roi No. 2, g	" "	120,000	5 0 0	.....	.....	7 10 0	8 10 0
Lillie, g	Colorado	250,000	1 0 0	2½	Apr., 1900	7 6	12 6
Montana, g., s	Montana	660,000	1 0 0	6	Apr., 1899	3 0	3 6
Mountain Copper	California	1,250,000	5 0 0	9 0	Oct., 1900	4 15 0	5 0 0
Stratton's Independence	Colorado	1,100,000	1 0 0	6	Jan., 1901	1 3 9	1 6 3
Copiapo, c	Chile	200,000	2 0 0	3 4	Dec., 1900	3 0 0	3 5 0
Frontino & Bolivia, g	Colombia	140,000	1 0 0	1 6	Oct., 1899	1 17 6	2 0 0
St. John del Rey, g	Brazil	600,000	1 0 0	1 0	Dec., 1900	1 5 9	1 6 3
Utah Con.,g.(High'nd Boy)	Utah	300,000	1 0 0	rts.	Mar., 1898	6 7 6	6 12 6
Velvet, g	British Col'mbia	100,000	1 0 0	.....	.....	17 6	1 2 6
Ymir, g	"	200,000	1 0 0	1 0	Nov., 1899	1 7 6	1 10 0
Rossland Great West, g	"	100,000	5 0 0	.....	.....	2 5 0	2 15 0
British Am. Corp	"	1,500,000	1 0 0	2 0	Mar., 1900	7 6	8 6
European:							
Linares, l	Spain	45,000	2 0 0	14 0	Oct., 1900	8 10 0	9 10 0
Mason & Barry, c., sul	Portugal	420,000	2 0 0	£1	" "	3 2 6	3 7 6
Rio Tinto, c	Spain	1,625,000	5 0 0	£2	" "	37 17 6	38 10 0
" " pref	"	1,625,000	5 0 0	2 6	" "	6 0 0	6 2 6
Tharsis, c	"	1,250,000	2 0 0	15 0	Apr., 1900	8 12 6	8 17 6
Australian:							
Assoc. Gold Mines	W. Australia	500,000	1 0 0	1 6	Jan., 1900	2 17 6	3 2 6
Broken Hill Prop., s	N. S. Wales	384,000	8 0	1 6	Nov., 1900	2 8 6	2 9 6
Great Boulder Prop	W. Australia	175,000	2 0	6	" "	1 4 0	1 6 0
Hannan's Brownhill, g	" "	140,000	1 0 0	7 6	Oct., 1900	4 2 6	4 5 0
Ivanhoe Gold Corp	" "	1,000,000	5 0 0	5 0	Nov., 1900	8 11 3	8 13 9
Kalgurlie, g	" "	120,000	1 0 0	rts.	Oct., 1899	3 17 6	4 5 0
Lake View Consols, g	" "	250,000	1 0 0	5 0	Aug., 1900	8 10 0	8 15 0
Mt. Lyell M. & R., l., c	Tasmania	900,000	3 0 0	2 0	Jan., 1900	5 12 6	5 17 6
Mt. Morgan, g	Queensland	1,000,000	1 0 0	7	Dec., 1900	4 17 6	5 0 0
Waihi g	New Zealand	320,000	1 0 0	rts.	Jan., 1901	10 15 0	11 0 0
Indian:							
Champion Reef, g	Colar Fields	220,000	10 0	5 0	Jan., 1901	6 0 0	6 2 6
Mysore Gold, g	" "	250,300	10 0	4 0	Nov., 1900	5 8 9	5 11 3
Nundyroog, g	" "	242,000	1 0 0	2 0	" "	3 2 6	3 5 0
Ooregum, g	" "	145,000	1 0 0	2 6	Dec., 1900	3 13 9	3 16 3
" pref. g	" "	120,000	1 0 0	2 6	" "	4 17 6	5 0 0
African:							
British S. Africa, chartered	So. Africa	5,000,000	1 0 0	rts.	May, 1899	3 2 6	3 3 9
Cape Copper, c	" "	600,000	1 0 0	5 0	Jan., 1901	5 10 0	5 15 0
" pref	" "	150,000	2 0 0	5 0	" "	5 5 0	5 10 0
City & Suburban (New), g	Transvaal	1,360,000	4 0 0	8 0	Aug., 1899	4 12 6	4 17 6
Con. Deep Level, g	" "	200,000	1 0 0	x all	June, 1898	17 6	1 2 6
Crown Reef, g	" "	120,000	1 0 0	18 0	Nov., 1899	18 15 0	14 5 0
De Beers Con., d	Cape Colony	3,950,000	5 0 0	£1	Jan., 1901	28 2 6	28 7 6
Ferreira, g	Transvaal	90,000	1 0 0	30 0	Aug., 1899	18 10 0	19 10 0
Geldenhuis Deep, g	" "	350,000	1 0 0	8 0	" "	8 2 6	9 0 0
Geldenhuis Est., g	" "	200,000	1 0 0	10 0	" "	5 7 6	5 12 6
Henry Nourse, g	" "	125,000	1 0 0	10 0	Apr., 1900	7 15 0	8 5 0
Jagersfontein, d	Orange Fr. St	1,000,000	5 0 0	6 0	Sept., 1900	15 0 0	16 0 0
Johannesburg Con

DIVIDENDS.

GOLD, SILVER, COPPER, ZINC, LEAD AND QUICKSILVER COMPANIES.

Number.	Name and Location of Company.		Author-ized Capital Stock.	Shares Issu'd No.	Shares Issu'd Par Val	Dividends. Paid, 1900.	Dividends. Total to Date.	Latest. Date.	Latest. Amt.
1	Acacia, g.	Colo.	$1,500,000	1,500,000	$1	$45,000	$45,000	Dec.. 1900	.01
2	Adams, s.l.c.	Colo.	1,500,000	150,000	10	7,500	701,000	Nov.. 1900	.05
3	Ætna Con., q.	Cal..	500,000	100,000	5	30,000	225,000	April. 1900	.15
4	Alaska-Mexican, g.	Alask	1,000,000	180,000	5	72,000	501,031	Oct... 1900	.10
5	Alaska-Treadwell, g.	Alask	5,000,000	200,000	25	300,000	4,520,000	Oct... 1900	.37½
6	Amalgamated, c.	Mont.	75,000,000	750,000	100	6,000,000	7,500,000	Oct... 1900	2.00
7	Amanda, g.	Colo..	1,000,000	1,000,000	1	10,000	10,000	June. 1900	.01
8	Amazon, g.	Colo..	600,000	600,000	1	102,000	121,882	May.. 1900	.10
9	Amer. Sm & Ref., pref.	U. S..	32,500,000	325,000	100	2,113,803	2,682,553	Oct... 1900	1.75
10	Am. Zinc, Lead & Sm.	Mo...	2,500,000	60,000	25	60,000	180,000	Jan.. 1900	1.00
11	Anaconda, c.	Mont.	30,000,000	1,200,000	25	4,800,000	16,950,000	Oct... 1900	2.00
12	Apollo Con., g.	Alask	1,000,000	100,000	10	70,000	210,000	Jan.. 1900	.07
13	Argonaut, g.	Cal...	2,000,000	200,000	10	70,000	490,000	May.. 1900	.05
14	Arizona, c.	Ariz..	3,190,550	.....	....	576,429	1,464,848	Sept.. 1900	.84
15	Atlantic, c.	Mich.	1,000,000	40,000	25	80,000	860,000	Feb.. 1900	2.00
16	Bald Butte, g. s.	Mont.	250,000	250,000	1	82,500	852,148	Sept.. 1900	.06
17	Boston-Aurora, pref.	Mo...	800,000	32,000	25	37,120	66,160	May.. 1900	.50
18	Boston & Colo. Smelting	Colo..	750,000	15,000	50	45,000	315,000	Oct... 1900	.75
19	Boston Duenweg, z.	Mo...	1,000,000	40,000	10	24,000	56,900	June.. 1900	.10
20	Boston Get There, z.	Mo...	250,000	22,500	10	9,000	20,250	April. 1900	.10
21	Boston Gold-Copper Sm.	Colo..	1,000,000	1,000,000	1	50,000	50,000	Nov.. 1900	.02½
22	Boston-Little Circle, z.	Mo-K.	1,000,000	100,000	10	12,500	87,500	Mar.. 1900	.12½
23	Boston & Mont. Con., c.s.g	Mont.	3,750,000	150,000	25	6,450,000	20,975,000	Nov.. 1900	15.00
24	Boston Phila., z. l.	Kas..	200,000	20,000	10	2,000	2,000	May.. 1900	.10
25	Boston Providence, z., pf	Mo...	150,000	15,000	10	6,000	17,242	Aug.. 1900	.05
26	Boston, q.	Cal...	1,000,000	100,000	10	10,000	20,000	Jan.. 1900	.10
27	Boston Springfield, z.	Mo...	500,000	20,000	25	15,000	15,000	June. 1900	.25
28	Breece	Colo..	5,000,000	200,000	25	30,000	100,000	Dec.. 1900	.05
29	Buffalo Hump, g. s. l.	Idaho	3,000,000	250,000	10	275,000	275,000	Dec.. 1900	.10
30	Bullion-Beck & Champ.	Utah.	1,000,000	100,000	10	60,000	2,498,400	June.. 1900	.10
31	Bunker Hill & Sullivan.	Idaho	3,000,000	300,000	10	231,000	1,032,090	Nov.. 1900	.07
32	Butte & Boston Con., c.	Mont.	2,000,000	200,000	10	1,000,000	1,000,000	Dec.. 1900	5.00
33	Calumet & Hecla, c.	Mich.	2,500,000	100,000	25	7,000,000	73,850,000	Dec.. 1900	20.00
34	Cariboo-McKinney, g.	B.Col	1,250,000	1,250,000	1	86,500	478,087	Oct... 1900	.01½
35	Center'l-Eureka, g.s.l.c.	Utah.	5,000,000	100,000	25	267,700	2,417,700	Oct... 1900	.50
36	Center Creek, l. z.	Mo...	1,000,000	100,000	10	30,000	40,000	Dec.. 1900	.20
37	Central Lead, l.	Mo...	1,000,000	10,000	100	60,000	197,000	Nov.. 1900	.50
38	Cloverdale, z.	Mo...	1,000,000	100,000	10	60,000	80,000	July.. 1900	.20
39	Columbia, l.	Mo...	500,000	48,500	10	16,975	16,975	Nov.. 1900	.05
40	Commonwealth, z., pref.	Mo ..	500,000	100,000	5	30,000	50,000	June. 1900	.05
41	Consolidated Gold Mines	Colo..	1,000,000	1,000,000	1	100,000	110,000	Nov.. 1900	.01
42	Con. Mercer Gold Mines.	Utah.	5,000,000	1,000,000	5	225,000	1,591,000	Nov.. 1900	.11
43	Consolidated, z. l., pf.	Mo...	400,000	400,000	1	8,000	8,000	Jan.. 1900	.20
44	Cordell, z. l.	Mo...	300,000	60,000	5	27,000	30,000	Sept.. 1900	.05
45	Cripple Creek Con., g.	Colo..	2,000,000	2,000,000	1	160,000	160,000	Mar.. 1900	.08
46	Crœsus, g.	Cal...	1,000,000	200,000	5	91,800	139,300	Dec.. 1900	.06
47	Daly West, g.	Utah.	3,000,000	150,000	20	450,000	570,000	Nov.. 1900	.25
48	De Lamar, g. s.	Idaho	2,000,000	400,000	5	48,000	2,394,000	May .. 1900	.12
49	Dixie, g.	Utah.	125,000	125,000	1	10,000	10,000	April. 1900	.02
50	Doe Run, l.	Mo...	1,500,000	10,000	100	50,000	402,073	Oct... 1900	.50
51	Ducktown, c. i. sul. (ord)	Tenn.	374,003	7,480	50	.....	95,744	Dec.. 1899	9.60
52	Ducktown (founder).	Tenn.	1,000	200	5	.....	41,160	Dec.. 1899	162.00
53	Elkton Con., g.	Colo..	3,000,000	2,500,000	1	258,750	979,461	Dec.. 1900	.03
54	Empire State-Idaho.	Idaho	1,000,000	98,514	10	354,649	672,687	Dec.. 1900	.30
55	Favorite, g.	Colo..	1,200,000	1,200,000	1	48,000	48,000	April. 1900	.04
56	Florence, s.	Mont.	2,500,000	440,000	5	22,000	252,000	April. 1900	.05
57	Frisco Con., l. s.	Idaho	2,500,000	500,000	5	.....	920,000	Nov.. 1899	.25
58	Garfield Con., g.	Colo..	1,200,000	1,200,000	1	.....	34,000	May.. 1899	.01
59	Gemini	Utah.	500,000	5,000	100	50,000	700,000	Aug.. 1900	10.00
60	Gold Belt, g.	Colo..	1,250,000	1,250,000	1	112,500	112,500	Aug.. 1900	.09
61	Gold Coin of Victor, g.	Colo..	1,000,000	1,000,000	1	220,000	580,000	Nov.. 1900	.02
62	Gold Deposit, g.	Colo..	500,000	500,000	1	10,000	10,000	Mar.. 1900	.02
63	Gold King, g.	Colo..	1,000,000	936,850	1	112,421	178,001	Oct... 1900	.03
64	Golden Cycle, g.	Colo..	1,000,000	200,000	5	110,000	368,500	Nov.. 1900	.05
65	Golden Eagle, g.	Colo..	500,000	500,000	1	5,000	25,000	June. 1900	.01
66	Grand Central, g.	Utah.	250,000	250,000	1	25,000	691,250	Nov.. 1900	.10
67	Grand Gulch	Ariz..	250,000	240,000	1	9,600	9,600	April. 1900	.01
68	Grass Valley Expl.	Cal...	100,000	30,000	2	37,500	67,500	May.. 1900	.25
69	Greater Gold Belt, g.	Colo.	5,000,000	3,800,000	1	76,000	76,000	June. 1900	.02
70	Gwin, g.	Cal...	1,000,000	100,000	10	45,000	126,500	Nov.. 1900	.15
71	Hall Mg. & Sm.	B.Col	1,250,000	250,000	5	.....	120,000	May.. 1899	.24
72	Hecla, l. s.	Idaho	250,000	1,000,000	¼	80,000	80,000	Oct... 1900	.02
73	Hecla Con., s. l.	Mont.	1,500,000	30,000	50	15,000	2,205,000	Oct... 1900	.05
74	Hidden Treasure, g.	Cal...	360,000	36,000	10	28,800	457,452	Sept.. 1900	.10
75	Holy Terror, g.	S. D..	500,000	500,000	1	5,000	172,000	Jan.. 1900	.01
76	Home, g.	Colo..	50,000	50,000	1	100,000	100,000	July.. 1900	.50
77	Homestake, g.	S. D..	21,000,000	210,000	100	1,155,000	9,298,750	Nov.. 1900	.50
78	Horn-Silver, g. s. c.z.l.	Utah.	10,000,000	400,000	25	20,000	5,270,000	June. 1900	.05
79	Idaho, g.	Idaho	1,000,000	1,000,000	1	8,188	8,188	April. 1900	.01
80	Idaho, s. l.	B.Col	500,000	500,000	1	.....	292,000	Jan.. 1899	.05¾
81	Independence Con.	Colo..	2,500,000	2,500,000	1	100,000	100,000	Aug.. 1900	.04
82	International, z.	Mo...	1,000,000	1,000,000	1	26,427	26,427	July.. 1900	.01
83	Iowa, g. s. l.	Colo..	1,666,667	1,666,667	1	39,334	136,834	June. 1900	.00¾
84	Iron Silver	Colo .	10,000,000	500,000	20	50,000	2,550,000	Dec.. 1900	.10
85	Isabella, g.	Colo.	2,250,000	2,250,000	1	157,500	697,500	Sept.. 1900	.01
86	Jack Pot, g.	Colo..	$1,250,000	1,250,000	$1	.....	$175,000	Dec.. 1899	.06
87	Jamison, g.	Cal ..	3,900,000	390,000	10	.....	50,700	April. 1899	.10
88	Klondike Bonanza, Ltd.	Klond	750,000	52,750	5	.....	12,000	Aug.. 1899	.24
89	La Fortuna, g.	Ariz..	250,000	250,000	1	$252,500	895,000	Oct... 1900	.05
90	Lake City, g.	Colo..	50,000	50,000	1	3,875	3,875	May . 1900	.01
91	Last Chance, s. l.	B.Col	500,000	500,000	1	.....	45,000	Apr.. 1899	.05
92	Last Dollar, g.	Colo..	1,500,000	1,500,000	1	90,000	120,000	Nov.. 1900	.02
93	Le Roi, g.	B.Col	5,000,000	200,000	5	.....	1,305,000	Nov.. 1899	1.20
94	Lightner, g.	Cal...	125,000	105,000	1	5,250	5,250	Oct... 1900	.05
95	Lillie, g.	Colo..	1,250,000	250,000	5	45,117	349,183	April. 1900	.05
96	Little Tiger, g.	Cal...	500,000	500,000	1	15,000	47,500	Feb.. 1900	.01½
97	Madison, g.	Colo..	1,250,000	1,050,000	1	35,000	35,000	June. 1900	.03½
98	Magnolia, g.	Colo..	1,250,000	1,100,000	1	187,000	187,000	July.. 1900	.17
99	Mammoth, g. s. c.	Utah.	10,000,000	400,000	25	200,000	1,810,000	Nov.. 1900	.05
100	Marion Con., g.	Colo..	5,000,000	500,000	10	.....	300,000	May.. 1899	.01
101	Mary McKinney, g.	Colo..	1,000,000	1,000,000	1	150,000	180,000	Oct... 1900	.03
102	Midget, g.	Colo..	1,000,000	1,000,000	1	15,000	15,000	May.. 1900	.15
103	Modoc, g. s.	Colo..	500,000	500,000	1	55,000	200,000	Nov.. 1900	.01
104	Monarch, g.	Colo..	1,000,000	1,000,000	1	120,000	120,000	April. 1900	.12
105	Montana, Ltd., g. s.	Mont.	3,300,000	657,128	5	.....	453,700	April. 1899	.12
106	Montana Ore Purchas'g.	Mont.	2,500,000	80,000	25	240,000	1,600,000	Sept.. 1900	1.00
107	Morning Star Drift, g.	Cal...	240,000	2,400	100	7,200	854,490	Sept.. 1900	3.00
108	Morse, g.	Colo..	1,250,000	1,250,000	1	.....	215,650	May.. 1899	.12
109	Mountain, c.	Cal ..	6,250,000	250,000	25	1,200,000	2,373,750	Oct... 1900	2.16
110	Mt. Diablo, s.	Nev. .	5,000,000	50,000	100	5,271	260,271	Jan.. 1900	.10
111	Mt. Rosa, g.	Colo..	1,000,000	1,000,000	1	.....	75,000	Dec.. 1899	.04
112	Mt. Shasta, g.	Cal...	100,000	20,000	5	.....	6,000	May.. 1899	.30
113	Moulton, g.	Mont.	2,000,000	400,000	5	.....	500,000	Oct... 1899	.05
114	Napa Con., q.	Cal ..	700,000	100,000	7	60,000	1,200,000	Oct... 1900	.10
115	National Lead, com.	U. S..	15,000,000	149,054	100	149,054	1,341,486	Mar.. 1900	1.00
116	National Lead, pf.	U. S..	15,000,000	149,040	100	1,043,280	10,579,280	Dec.. 1900	1.75
117	New Idria, q.	Cal...	500,000	100,000	5	80,000	250,000	Oct... 1900	.20
118	N. J. & Mo., z.	Mo...	250,000	2,500	100	11,000	11,000	June.. 1900	2.00
119	New York, z.	Kas. .	700,000	28,000	25	.....	6,500	Oct... 1899	.25
120	N.Y.& Hon Rosario, s.g.	C. A..	1,500,000	150,000	10	255,000	1,415,000	Dec.. 1900	.40
121	North Star Mines.	Cal ..	5,000,000	250,000	10	.....	584,850	Nov.. 1899	.20
122	Old Colony Zinc & Sm.	Mo...	1,100,000	69,909	10	68,276	68,276	Oct... 1900	.25
123	Omega, g.	Colo..	1,500,000	1,212,555	1	18,188	18,188	June. 1900	.01½
124	Ontario, s. l.	Utah.	15,000,000	150,000	100	90,000	13,662,500	April. 1900	.30
125	Orphan Belle, g.	Colo..	1,000,000	1,000,000	1	.....	197,899	Dec.. 1899	.09
126	Original Empire, g.	Cal...	5,000,000	50,000	100	.....	530,000	Oct... 1899	1.00
127	Osceola, c.	Mich.	2,500,000	93,000	25	558,000	3,638,500	Dec.. 1900	3.00
128	Parrot, c.	Mont.	2,300,000	229,850	10	1,379,100	4,393,825	Oct... 1900	1.50
129	Pennsylvania Con., g.	Cal...	5,150,000	51,500	100	25,750	161,325	May.. 1900	.10
130	Petro, g.	Utah.	1,000,000	200,000	5	.....	32,000	Oct... 1899	.02½
131	Pioneer, g.	Cal...	1,000,000	100,000	10	.....	62,500	Mar.. 1899	.12½
132	Plumas Eureka, g.	Cal ..	1,406,250	140,625	10	84,375	2,797,544	April. 1900	.60
133	Portland, g.	Colo..	3,000,000	3,000,000	1	750,000	3,307,080	Oct... 1900	.06
134	Queen Bess Propr., s. l.	B.Col	500,000	100,000	5	.....	25,000	July.. 1899	.12½
135	Quicksilver, pref.	Cal...	4,300,000	43,000	100	21,500	1,866,911	July.. 1900	.50
136	Quincy, c.	Mich.	2,500,000	100,000	25	900,000	11,970,000	Aug.. 1900	4.00
137	Rambler—Cariboo, s. l.	B.Col	1,250,000	1,250,000	1	33,750	105,000	Mar.. 1900	.01
138	Republic Con., g.	Wash	3,500,000	3,500,000	1	105,000	382,500	Mar.. 1900	.01
139	Reward, g.	Cal ..	1,000,000	100,000	10	.....	20,000	Aug . 1899	.20
140	Rocco-Homestake-Nev	Nev..	300,000	300,000	1	9,000	9,000	Dec.. 1900	.01½
141	Russell-Irwin, z.	Mo...	250,000	25,000	10	.....	15,000	Oct... 1859	.10
142	Sacramento, g.	Utah.	5,000,000	1,000,000	5	.....	138,000	Oct... 1899	.00½
143	St. Joseph, l.	Mo...	3,000,000	250,000	10	112,500	3,272,200	Sept.. 1900	.15
144	Santa Rita, g.	Colo..	1,000,000	1,000,000	1	4,000	4,000	July.. 1900	.02
145	Silver King, g. s. l.	Utah.	3,000,000	150,000	20	825,000	3,275,000	Nov.. 1900	.50
146	Silver Shield, g.	Utah.	300,000	300,000	1	1,500	1,500	Dec.. 1900	.00¼
147	Small Hopes, s.	Colo..	5,000,000	250,000	20	.....	3,325,000	Feb.. 1899	.10
148	Smuggler, s. l. z.	Colo..	1,000,000	1,000,000	1	336,000	1,700,000	Nov.. 1900	.03
149	South Swansea, s. l.	Utah.	150,000	150,000	1	.....	165,000	Oct... 1899	.05
150	Southern Boy, g.	Colo..	1,250,000	875,000	1	17,500	17,500	May . 1900	.02
151	Squaw Mountain, g.	Colo..	2,000,000	2,000,000	1	.....	10,000	Nov.. 1899	.00½
152	Standard Con., g. s.	Cal...	2,000,000	200,000	10	80,000	3,979,226	Nov.. 1900	.10
153	Standard, s. l.	Idaho	500,000	500,000	1	295,000	2,100,000	Oct... 1900	.08
154	Stratton's Independ'ce.	Colo..	5,500,000	1,000,007	5	1,789,337	2,765,352	Oct... 1900	.48
155	Swansea, s. l.	Utah.	500,000	100,000	5	65,000	261,500	Nov.. 1900	.05
156	Tamarack, c.	Mich.	1,500,000	60,000	25	1,020,000	7,200,000	Dec.. 1900	10.00
157	Tomboy, g.	Colo..	1,500,000	300,000	5	144,000	956,000	Dec.. 1900	.24
158	Touraine, g.	Colo..	1,250,000	1,250,000	1	87,500	87,500	April. 1900	.07
159	Union, g.	Colo..	1,250,000	1,250,000	1	312,500	395,244	Sept.. 1900	.25
160	Union, z. l.	Kas..	500,000	500,000	1	15,000	15,000	Aug.. 1900	.01
161	United, z. l., pref.	Mo...	6,000,000	14,938	25	27,598	30,263	Oct... 1900	.50
162	United Verde, c.	Ariz..	3,000,000	300,000	10	1,875,000	2,737,500	Nov.. 1900	.75
163	Utah, g.	Utah.	1,000,000	100,000	10	2,000	181,000	Oct... 1900	.02
164	Vindicator Con., g.	Colo..	1,500,000	1,500,000	1	188,500	493,500	Oct... 1900	.02
165	War Eagle Con., g. s. c.	B.C..	2,000,000	1,750,000	1	52,500	545,250	Feb.. 1900	.01½
166	What Cheer, z.	Mo...	225,000	22,500	10	9,000	11,250	May.. 1900	.20½
167	Wolverine, c.	Mich.	1,500,000	60,000	25	240,000	510,000	Oct... 1900	2.00
168	Yellow Aster, g.	Cal...	1,000,000	100,000	10	140,000	449,416	Nov.. 1900	.10
169	Ymir, g.	B.Col	1,000,000	125,000	5	.....	30,000	Nov.. 1899	.24

COAL, IRON AND OTHER COMPANIES.

Number.	Name and Location of Company.		Author-ized Capital Stock.	Shares Issu'd No.	Shares Issu'd Par Val	Dividends. Paid, 1900.	Dividends. Total to Date.	Latest. Date.	Latest. Amt.
1	Alabama Coal & Iron, pf	Ala...	$2,500,000	25,000	$100	$175,000	$218,750	Nov.. 1900	1.75
2	Am. Agricul. Chem., pf.	U. S..	20,000,000	170,000	100	1,020,000	1,530,000	Oct... 1900	3.00
3	American Cement.	Pa....	2,100,000	200,000	10	80,000	140,000	July.. 1900	.40
4	American Coal.	Md...	1,500,000	60,000	25	255,000	982,500	Sept.. 1900	1.00
5	Am. Fuel Oil.	Cal...	100,000	100,000	1	11,000	14,000	Nov.. 1900	.01
6	Am. Steel Hoop, pf.	U. S..	14,000,000	140,000	100	980,000	1,225,000	Oct... 1900	1.75
7	Am. Steel & Wire, com.	U. S..	50,000,000	500,000	100	2,625,000	2,625,000	Oct... 1900	1.75
8	Am. Steel & Wire, pf.	U. S..	40,000,000	400,000	100	2,800,000	5,600,000	Oct... 1900	1.75
9	Arizona Western Oil.	Cal...	100,000	100,000	1	1,000	1,000	Sept.. 1900	.01
10	Bethlehem Steel	Pa...	15,000 000	300,000	50	600,000	900,000	Dec.. 1900	.50
11	Buckhorn Oil.	Cal...	200,000	16,000	10	3,800	3,800	Mar.. 1900	.05
12	Burlington Oil.	Cal...	60,000	60,000	1	3,000	3,000	Oct... 1900	.01
13	Cambria Steel	Pa...	16,000,000	320,000	50	940,000	1,600,000	Nov.. 1900	.50
14	Colo. Fuel & Iron, pf.	Colo..	2,000,000	20,000	100	800,000	1,160,000	Dec.. 1900	8.00
15	Consolidation Coal.	Md...	10,250,000	102,500	100	205,000	5,113,000	Feb.. 1900	2.00
16	Diamond Star Oil.	Cal...	250,000	250,000	1	5,000	5,000	Nov.. 1900	.02
17	Empire Steel & Iron, pf.	U. S..	5,000,000	23,700	100	71,100	142,200	July.. 1900	1.50
18	Federal Steel, com.	U. S..	50,000,000	464,843	100	1,743,162	1,743,162	Mar.. 1900	2.50
19	Federal Steel, pf.	U. S..	50,000,000	532,609	100	5,059,794	6,657,654	Oct... 1900	1.75
20	General Chem., com.	U. S..	12,500,000	70,703	100	282,812	411,814	Dec.. 1900	1.00
21	General Chem., pf.	U. S..	12,500,000	81,264	100	365,688	519,959	Oct... 1900	1.50
22	Gray Eagle Oil.	Cal...	250,000	100,000	2½	50,000	120,000	Nov.. 1900	.50
23	Great Western Oil.	Cal...	100,000	10,000	10	10,000	10,000	Oct... 1900	.10
24	Home Oil.	Cal...	100,000	100,000	1	190,000	190,000	Nov.. 1900	.10
25	Homestake Oil.	Cal...	100,000	10,000	10	3,500	3,500	Nov.. 1900	.25
26	Jefferson&Clearf.C'l,cm	Pa...	1,500,000	15,000	100	30,000	30,000	Aug.. 1900	2.00
27	Jefferson&Clearf.C'l,pf.	Pa...	1,500,000	15,000	100	75,000	187,500	Aug.. 1900	2.50
28	Kern Oil.	Cal...	100,000	100,000	1	8,500	8,500	Nov.. 1900	.50
29	Lehigh Coal & Nav.	Pa...	14,346,650	286,933	50	789,066	18,516,990	Oct... 1900	1.50
30	Maryland Coal, pf.	Md...	$1,885,005	18,850	$100	$94,256	$640,869	Dec.. 1900	3.00
31	Monongahela R. Coal, pf	Pa....	10,000,000	200,000	50	350,000	350,000	July.. 1900	1.75
32	Montana Coal & Coke.	Mont.	5,000,000	200,000	25	120,000	120,000	Oct... 1900	.30
33	National Salt, com.	U. S..	7,000,000	70,000	100	245,000	245,000	Dec.. 1900	1.50
34	National Salt, pf.	U. S..	5,000,000	50,000	100	350,000	525,000	Nov.. 1900	1.75
35	National Steel, pf.	U. S..	27,000,000	270,000	100	1,890,000	3,307,500	Dec.. 1900	1.75
36	New Central Coal.	Md...	1,000,000	50,000	20	40,000	510,000	Nov.. 1900	.40
37	Oceanic Oil.	Cal...	100,000	100,000	1	1,000	1,000	Sept.. 1900	.01
38	Pacific Coast Borax.	Cal...	2,000,000	20,000	100	220,000	742,500	Nov.. 1900	1.00
39	Park Crude Oil.	Cal...	100,000	82,146	1	4,897	4,897	Sept.. 1900	.01
40	Pennsylvania Coal.	Pa...	5,000,000	100,000	50	800,000	19,700,000	Nov.. 1900	2.00
41	Pennsylvania Salt.	Pa....	2,500,000	50,000	50	300,000	12,550,000	Oct... 1900	3.00
42	Pennsylvania Steel, pf.	Pa...	1,500,000	15,000	100	105,000	131,250	Oct... 1900	1.75
43	Pittsburg Coal., pf.	Pa...	32,000,000	320,000	100	2,240,000	2,240,000	Oct... 1900	1.75
44	Producers' & Con. Oil	Cal...	1,000,000	10,000	100	3,000	3,000	Oct... 1900	.30
45	Republic Iron & Steel, pf	U. S..	25,000,000	203,069	100	1,421,483	1,776,854	Oct... 1900	1.75
46	Rex Crude Oil.	Cal...	500,000	85,000	5	21,250	21,250	Oct... 1900	.02
47	Sloss-Sheffield Ir.&St., pf	U. S..	20,000,000	67,000	100	352,500	352,500	Oct.. 1900	1.75
48	Standard Oil (of N. J.).	U. S..	100000,000	975,000	100	46,800,000	73,125,000	Sept.. 1900	8.00
49	Susquehanna Ir. & Steel	Pa..	1,500,000	300,000	5	112,500	292,500	Oct... 1900	.07½
50	Tenn. Coal, I. &R.R., com	Tenn.	23,000,000	225,536	100	902,144	1,553,216	Nov.. 1900	2.00
51	Tenn. Coal, Ir. & R.R., pf	Tenn.	248,000	2,480	100	143,840	243,040	Nov.. 1900	2.00
52	Texas & Pacific Coal.	Tex..	2,000,000	20,000	100	120,000	1,800,000	Oct... 1900	1.50
53	United States Oil.	W.Va	2,500,000	100,000	25	275,000	575,000	Oct.. 1900	.50
54	Va.-Carolina Chem., com	U. S..	12,000,000	90,000	100	360,000	720,000	Dec.. 1900	1 00
55	Va.-Carolina Chem., pf.	U. S .	12,000,000	100,000	100	800,000	1,200,000	Oct... 1900	2.00
56	West Lake Oil.	Cal ..	500,000	500,000	1	50,000	50,000	Sept.. 1900	.01
57	Westmoreland Coal.	Pa....	5,000,000	250,000	50	150,000	.....	Oct... 1900	1.50
58	Yukon Oil.	Cal...	2,500,000	100,000	2½	18,000	21,000	Oct... 1900	.02

This table is corrected up to December 8th. Correspondents are requested to forward changes or additions.

CHEMICALS, MINERALS, RARE ELEMENTS, ETC.—CURRENT WHOLESALE PRICES.

	Cust. Meas.	Price.
Abrasives—		
Carborundum, f.o.b. Niagara Falls, Powd., F. FF. FFF	lb.	$0.12
Minute No. 1	"	.15
No. 15	"	1.00
Corundum, N. C.	"	.07@.10
Chester, Mass.	"	.04½@.05
Crushed Steel, f. o. b. Pittsburg	"	.05½
Emery, Turkish flour, in kegs	"	.03
Grains, in kegs	"	.04½@.05
Naxos flour, in kegs	"	.03
Grains, in kegs	"	.05
Chester flour, in kegs.	"	.03
Grains, in kegs	"	.04½@.05
Peekskill flour, in kegs	"	.01¾
Grains, in kegs	"	.02½
Crude, ex-ship, N. Y.:		
Kuluk (Turkey)	lg. ton	22.00@24.00
Abbott (Turkey)	"	26.50@30.00
Naxos (Greek) h. gr.	"	32.00
Pumice Stone, Am. powd.	lb.	.01½@.02
Italian, powdered	"	.01½
Lump, per quality	"	.04@.40
Rottenstone, ground	"	.02¼@.03
Lump, per quality	"	.05@.14
Rouge, per quality	"	.10@.30
Steel Emery, f.o.b. Pittsburg	"	.07
Acids—Acetic, 30% pure	100 lbs.	3.50
30% ch. pure	"	6.00
80% pure	"	7.50
Benzoic, English	oz.	.12
German	lb.	.45
Boracic, cryst.	"	.10½@.11
Powdered	"	.11@.11½
Carbolic, crude, 60%	gal.	.27
Cryst, 37%, drums	lb.	.23
Liquid, 95%	gal.	.45
Carbonic, liquid gas	lb.	.12½
Chromic, crude	"	.20
Chem. pure	"	.50
Hydrochloric, ch. pure.	"	.07
Hydrofluoric, 36%	"	.03
48%	"	.05
Best	"	.25
Nitric, chem. pure	"	.09
Sulphuric, chem. pure	"	.07
Sulphurous, liquid anhy.	"	.08
Tartaric, cryst.	"	.29@.29½
Powder	"	.30@.30½
Alcohol—Grain	gal.	2.45
Refined wood, 95@97%	"	.75@.80
Purified	"	1.50
Alum—Lump	100 lbs.	1.75
Ground	"	1.85
Powdered	"	3.00
Chrome, com'l	"	2.75@3.00
Aluminum—Nitrate	lb.	1.50
Oxide, com'l, common	"	.06½
Best	"	.20
Pure	"	.80
Hydrated	100 lbs.	2.60
Sulphate, pure	"	1.50@1.75
Com'l	"	1.15@1.25
Ammonia—Aqua, 16°	lb.	.03
18°	"	.03¼
20°	"	.03¾
26°	"	.05½
Ammonium—		
Bromide, pure	"	.52@.53
Carbonate lump	"	.08¼@.08¾
Powdered	"	.09½@.09¾
Muriate, gran.	"	.06
Lump	"	.09¼
Nitrate, white, pure (99%)	"	.10½
Phosphate, com'l	"	.12
Chem. pure	"	60
Antimony—		
Glass	"	.30@.40
Needle, lump	"	.05½@.06
Powdered, ordinary	"	.05¾
Best	"	.08½
Oxide, com'l white, 95%	"	.09½
Com'l white, 99%	"	.12
Com'l gray	"	.07
Sulphuret, com'l	"	.16
Arsenic—White	"	.04½@.04⅝
Red	"	.07¼@.07½
Asphaltum—		
Ventura, Cal.	sh ton	32.00
Cuban	lb.	.01½@.03½
Egyptian, crude	"	.05½@.06
Trinidad, refined	lg. ton	35.00
San Valentino (Italian).		15.00
Seyssel (French) mastic.	sh.ton	20.00
Gilsonite, Utah, ordinary	lb.	.03
Select	"	.03¾
Barium—Carbonate, Lump, 80@90%	sh. ton	25.00@27.50
92@98%	"	26.00@29.00
Powdered, 80@90%	lb.	.01¾@02
Chloride, com'l	"	.02@.02¼
Chem. pure cryst	"	.05
Nitrate, powdered	"	.06
Oxide, com'l, hyd. cryst	"	.18
Hydrated, pure cryst.	"	.25
Pure, powd.	"	.27
Sulphate	"	.01
Barytes—Am. Cr., No. 1.	sh.ton	9.00
Crude, No. 2	"	8.00
Crude, No. 3	"	7.75
German, gray	"	14.50
Snow white	"	17.00
Bauxite—Ga. mines: 1st grade	lg. ton.	5.00
Second grade	"	4.25@4.50
Ala., f.o.b., 1st grade	"	5.00
Second grade	"	4.25@4.50
Bismuth—Subnitrate	lb	1.75
Subcarbonate	"	1.95
Bitumen, "B"	"	.03½
"A"	"	.05
"A" and "B"	"	.04½
Bone Ash	"	02¾@.03½
Borax	lb.	$ .07¼@.07½
Calcined	"	.25
Bromine	"	.40
Cadmium—Metallic	"	1.40
Sulphate	100 lbs.	2.00@2.50
Calcium—Acetate, gray.	"	1.55
" brown	"	1.05
Carbide, ton lots, f. o. b. Niagara Falls, N.Y.	sh. ton	80.00
Carbonate, ppt.	lb.	.05
Chloride, com'l.	100 lbs.	.75
Best	"	.80
Sulphite	lb.	.05
Cement—		
Portland, Am. 400 lbs.	bbl.	1.50@2.00
Belgium	"	1.95@2.20
English	"	2.45@2.55
German	"	2.30@2.70
"Rosendale," 300 lbs.	"	1.05
Sand cement, 400 lbs.	"	1.55@1.95
Slag cement, imported.	"	1.65
Ceresine—		
Orange and Yellow	lb.	.12
White	"	.14
Chalk—Lump, bulk	sh. ton	2.60
Ppt. per quality	lb.	.03¾@.06
Chlorine—Liquid	"	.30
Water	"	.15
Chrome Ore—		
(50% ch.) ex-ship, N. Y.	lg. ton	26.00
Sand, f.o.b. Baltimore	"	33.00
Bricks, f.o.b., Pittsburg. M		175.00
Clay, China—Am. com., ex-dock, N. Y.	lg ton	8.00
Am. best, ex-dock, N. Y.	"	9.00
English, common	"	12 00
Best grade	"	17 00
Fire Clay, ordinary	sh. ton	4.25
Best	"	6.00
Slip Clay	"	7.00
Coal Tar Pitch	gal.	.08
Cobalt—Carbonate	lb.	1.75
Nitrate	"	1.50
Oxide—Black	"	2.20@2.30
Gray	"	2.22@2.40
Smalt, blue ordinary	"	.14
Best	"	.19
Copperas	100 lbs.	.45
Copper—Carbonate	lb.	.18
Chloride	"	.25
Nitrate, crystals	"	.35
Oxide, com'l	"	.19
Cream of Tartar—Crys.	"	.21@.21½
Powdered	"	.21¼@21½
Cryolite	"	.06½
Explosives—		
Blasting powder, A. 25 lb. keg		2.50
Blasting powder, B.	"	1.25
"Rackarock," A.	lb.	.25
"Rackarock," B.	"	.18
Judson R.R. powder	"	.10
Dynamite (20% nitro-glycerine)	"	.13
(30% nitro-glycerine)	"	.14
(40% nitro-glycerine)	"	.15
(50% nitro-glycerine)	"	.16½
(60% nitro-glycerine)	"	.18
(75% nitro-glycerine)	"	.21
Glycerine for nitro (32 2-10° Be.)	"	.13½@.13¾
Feldspar—Ground	sh. ton	8.00@9.00
Fluorspar—In bulk.		
Am. lump, 1st grade	"	12.40
2d grade	"	11.90
Gravel & crushed, 1st g	"	11.40
2d grade	"	10.90
Ground, 1st grade	"	15.90
Foreign, lump	"	8.00@12.00
Ground	"	11.50@14.00
Fuller's Earth—Lump.	100 lbs.	.75
Powdered	"	.85
Refined lump	"	1.25
Graphite—Am. f. o. b. Providence, R.I. lump	sh. ton	8.00
Pulverized	"	30.00
German, lump	lb.	.01¼
Pulverized	"	.01½@.02
Ceylon, common	"	.03½
Pulverized	"	.04@.08
Italian, pulv	"	.01¼
Gypsum—Ground	sh. ton	8.00@8.50
Fertilizer	"	7.00
Rock	lg. ton	4.00
English and French	"	14.00@16.00
Infusorial Earth—Ground.		
American, best	"	20.00
French	"	37.50
German	"	40.00
Iodine—Crude	100 lbs.	2.45
Iron—Muriate	lb.	.05
Nitrate, com'l	"	.01¼
True	"	.03½
Oxide, pure copperas col	"	.05@.10
Purple-brown	"	.02
Venetian red	"	.01@.01½
Scale	"	.01@.03
Kaolin—(See Clay, China).		
Kryolith—(See Cryolite.)		
Lead—Acetate, white	lb.	.07
Com'l, broken	"	.06½
Brown	"	.05½
Nitrate, com'l	"	.06½
gran	"	.8½
Lime—Com., ab. 250 lbs	bbl.	.70
Finishing	"	.80
Magnesite—Greece.		
Crude (95%)	lg. ton	6.50@7.00
Calcined	sh.ton	14.00@15.00
Bricks	M.	170.00
Am. Bricks, f o.b. Pittsburg	"	175.00
Magnesium—		
Carbonate, light, fine pd	lb.	.03¾
Blocks	"	.06@.09
Chloride, com'l	"	.01¾
Fused	"	.20
Magnesium—		
Nitrate	lb.	$0.60
Sulphate	100 lbs.	.90
Manganese—Crude-pow'd 70@75% binoxide	lb.	.01¼@.01½
Crude, pow'd 75@85% binoxide	"	.01½@.02½
85@90% binoxide	"	.02½@.03¼
90@95% binoxide	"	.02¾@.05½
Carbonate	"	.16@.20
Chloride	"	.04
Ore, 50%, Foreign	unit	.26¾
Domestic	"	.30
Marble—Flour	sh. ton	6.00@7.00
Mercury—Bichloride	lb.	.77
Mica—N. Y. gr'nd. coarse	"	.03¼@.03¾
Fine	"	.04@.05
Sheets, N. C., 2x4 in	"	.30
3x3 in	"	.80
3x4 in	"	1.50
4x4 in	"	2.00
6x6 in	"	3.00
Scrap, f.o.b., Dillsboro, N. C.	sh. ton.	25.00
Mineral Wool—		
Slag, ordinary	sh. ton	19.00
Selected	"	25.00
Rock, ordinary	"	32.00
Selected	"	40.00
Monazite—92%	"	140.00
Nickel—Oxide, No. 1	lb.	1.00
No. 2	"	.60
Sulphate	"	.20@.21
Oils—Black, reduced 29 gr.: 25@30 cold test	gal.	.09¼@.09¾
15, cold test	"	.10¼@.10¾
Zero	"	.11¼@.12¼
Summer	"	.08¾@.09¼
Cylinder, dark steam ref	"	.08¾@.10¼
Dark filtered	"	.11¼@.15¾
Light filtered	"	.14¼@.17¼
Extra cold test	"	.21¼@.26¼
Gasoline, 86° @ 90°	"	.16@.21
Naphtha, crude 68@72°	bbl.	9.60
"Stove"	gal.	.12
Linseed, domestic raw	"	.56
Boiled	"	.58
Calcutta, raw	"	.85
Graphite, lubricating, Am. dry	lb.	.10
In oil	"	.12
Axle grease	"	.08¼@.10
Wood grease	"	.05@.06
Ozokerite	"	.10@.12
Paints and Colors—		
Chrome green, common	"	.05
Pure	"	.16
Yellow, common	"	.10¼
Best	"	.25
Silica Graphite, thick	"	.12
Thinned	gal.	1.15
Lampblack, com'l	lb.	.03
Refined	"	.07
Litharge, Am. powd.	"	.05½@.06
English flake	"	.08
Glassmakers	"	.07½
Metallic, brown	sh. ton	19.00
Red	"	16.00
Ocher, Am. common	"	9.25@10.00
Best	"	21.25@25.00
Dutch, washed	lb.	.04¾
French, washed	"	.01¼@.02½
Orange mineral, Am.	"	.07¾@.08
Foreign, as to make	"	.08½@.11½
Paris green, pure, bulk	"	.12½
Red lead, American	"	.06
Foreign	"	.07¾
Shellac, "D. C."	"	.30
Native	"	.15
Turpentine, spirits	gal.	.40½
Ultramarine, best	lb.	.25
Vermilion, Amer. lead., Quicksilver, bulk	"	.10@.15
	"	.64
English, imported	"	.80
White lead, Am., dry	"	.05¾
English	"	.06½@.07¾
Whiting, common	100 lbs.	.42
Gilders	"	.54
Zinc white, Am., ex. dry	lb.	.04⅝@.04⅞
American, red seal	"	.06¾
Green seal	"	.07¼
Foreign, red seal, dry	"	.06½@.06⅝
Green seal, dry	"	.07¼@.09⅝
Potash—Caustic, ord	"	.04½@.05
Elect. (90%)	"	.06½
Potassium—		
Bicarbonate cryst.	"	.08¼
Powdered or gran	"	.14
Bichromate, Am.	"	.08⅜
Scotch	"	.06½
Carbonate, hydrated	"	.04½
Calcined	"	.04
Chromate	"	.35
Cyanide (98@99%)	"	.27½@.28
Iodide, bulk	"	2.30
Permanganate, pure cr.	"	.11¼@.11½
Prussiate, yellow	"	.14⅝@.15¼
Red	"	.37
Silicate	"	.06
Sulphide, com'l	"	.10
Quartz—(See Silica).		
Rosin—		
Com. strained (280 lbs.)	bbl.	1.55
Best strained	"	3.30
Medium	"	1.90
Salt—		
N Y com, fine	sh. ton	2.00
N. Y. agricultural	"	1.50
Saltpeter—		
Crude	100 lbs.	3.50
Refined	"	4.25
Silica—Best foreign	lg. ton	10 00@11.00
Ground quartz, ord	sh. ton	6.00@8.00
Best	"	12,00@13.00
Lump quartz	"	2.50@4.00
Glass sand	"	2.75
Silicon—Carbide	lb.	.05
Silver—		
Chloride	oz.	$0.65
Nitrate	"	.40
Oxide	"	.85@1.10
Slate—Ground, black	sh. ton	7.50@8.75
Ground, red and olive.	"	20.00
Sodium—Acetate, com'l.	lb.	.04¼
Bichromate	"	.06⅜
Chlorate, com'l	"	.09@.09¼
Hyposulphite, Am.	100 lbs.	1.80
German	"	2.00
Nitrite, 96@98%	lb.	.08
Peroxide	"	.45
Phosphate	"	.02½
Prussiate	"	.12½
Silicate, conc	"	.05
com'l	"	.01
Sulphate, com'l	100 lbs.	.70
Gran., puri'd	lb.	.03
Sulphide	"	.01¾
Sulphite crystals	"	.02½
Tungstate, com'l	"	.35
Strontium—Nitrate	"	.08
Sulphur—Roll	100 lbs.	1.75
Flour	"	1.80
Flowers, sublimed	"	2.05
Talc—N. C., 1st grade	sh. ton	13.75
N. Y., Fibrous	"	8.00@9.00
French, best	100 lbs.	1.25
Italian, best	"	1.75
Tar—Regular	bbl.	2.00
Oil barrels	"	4.00
Tin—Bichloride	lb.	.09½@.10
Crystals	"	.22
Muriate, 36°	"	.09
52°	"	.15
Oxide, white, ch. pure	"	.40
Uranium—Oxide	"	2.25@3.00
Zinc—Metallic, ch. pure	"	.07¼@.09½
Carbonate	"	.15
Chloride	"	.05
Dust	"	.07¼@.07½
Sulphate	"	.02@.02¼

THE RARE ELEMENTS.

Prices given are at makers' works in Germany, unless otherwise noted.

	Cust. Meas.	Price.
Barium—Amalgam	grm.	$1.19
Electrol	"	5.71
Beryllium—Powder	"	5.95
Crystals	"	9.04
Nitrate (N Y.)	oz.	1.50
Boron—Amorphous, pure	grm.	.19
Crystals, pure	"	1.43
Nitrate (N. Y.)	lb.	1.50
Cadmium—Sticks	kg.	1.55
Sheets	"	2.83
Granulated	"	2.38
Powder	"	1.90
Calcium—Elect.	grm.	4.28
Cerium—Fused	"	2.02
Nitrate (N. Y.)	oz.	1.25
Chromium—Fused, Elect.	kg.	5.95
Pure powder 95%	"	1.79
Chem. pure cryst	grm.	.20
Cobalt—(98@99%)	kg.	6.66@8.33
Pure	"	30.94
Didymium—Powd.	grm.	3.81
Fused, Elect.	"	5.47
Nitrate (N. Y.)	oz.	2.50
Erbium	grm.	3.09
Nitrate (N. Y.)	oz.	2.50
Germanium—Powder	grm.	33.32
Fused	"	35.70
Glucinum—Powder	"	5.95
Crystals	"	9.04
Nitrate (N. Y.)	oz.	2.75
Indium	grm.	3.57
Iridium—Fused	"	1.07
Powder	"	.95
Lanthanum—Powder	"	4.28
Electrol, in balls	"	9.04
Nitrate (N. Y.)	oz.	2.25
Lithium	grm.	2.38
Nitrate (N. Y.)	oz.	.60
Magnesium—Ingot	kg.	6.19
In wire or ribbon	"	9.99
Powdered	"	5.95@7.14
Sheet	"	9.04
Molybdenum—Fused	grm.	.15
Powder, 95%	kg.	2.62
Niobium	grm.	3.81
Osmium	"	.94
Palladium—Wire	"	.86
Sponge	"	62
Potassium—In balls	kg.	17.85
Rhodium	grm.	2.38
Rubidium—Pure	"	4.76
Ruthenium—Powder	"	2.38
Rutile—Crude	kg.	.43
Selenium—Com'l powder	"	26 28
Sublimed powder	"	35.70
Sticks	"	28.56
Silicium—Com'l	"	28.56
Chem. pure crystals	"	59.50
Amorphous	"	27.36
Sodium (N. Y.)	lb.	.65
Strontium—Electrol	grm.	6.19
Tantalium—Pure	"	3.57
Tellurium—Ch. p. sticks.	kg.	107.00
Chem. pure powder	"	83.30
Thallium	"	26.18
Thorium—Nitrate 49@50% (N. Y.)	lb.	5.00
Titanium	kg.	47.60
Uranium	"	190.40
Nitrate (N. Y.)	oz.	.25
Wolfram—Fused, elect.	kg.	238.00
Powder, 95@98%	"	1.43
Chem. pure powder	"	6.43
Yttrium	grm.	3.33
Nitrate (N. Y.)	oz.	2.75
Zirconium—Com'l	kg.	119.00
Nitrate (N. Y.)	oz.	.75

NOTE.—These quotations are for wholesale lots in New York unless otherwise specified, and are generally subject to the usual trade discounts. This table is revised up to Jan. 8. Readers of the ENGINEERING AND MINING JOURNAL are requested to report any corrections needed, or to suggest additions which they may consider advisable. See also Market Reviews.